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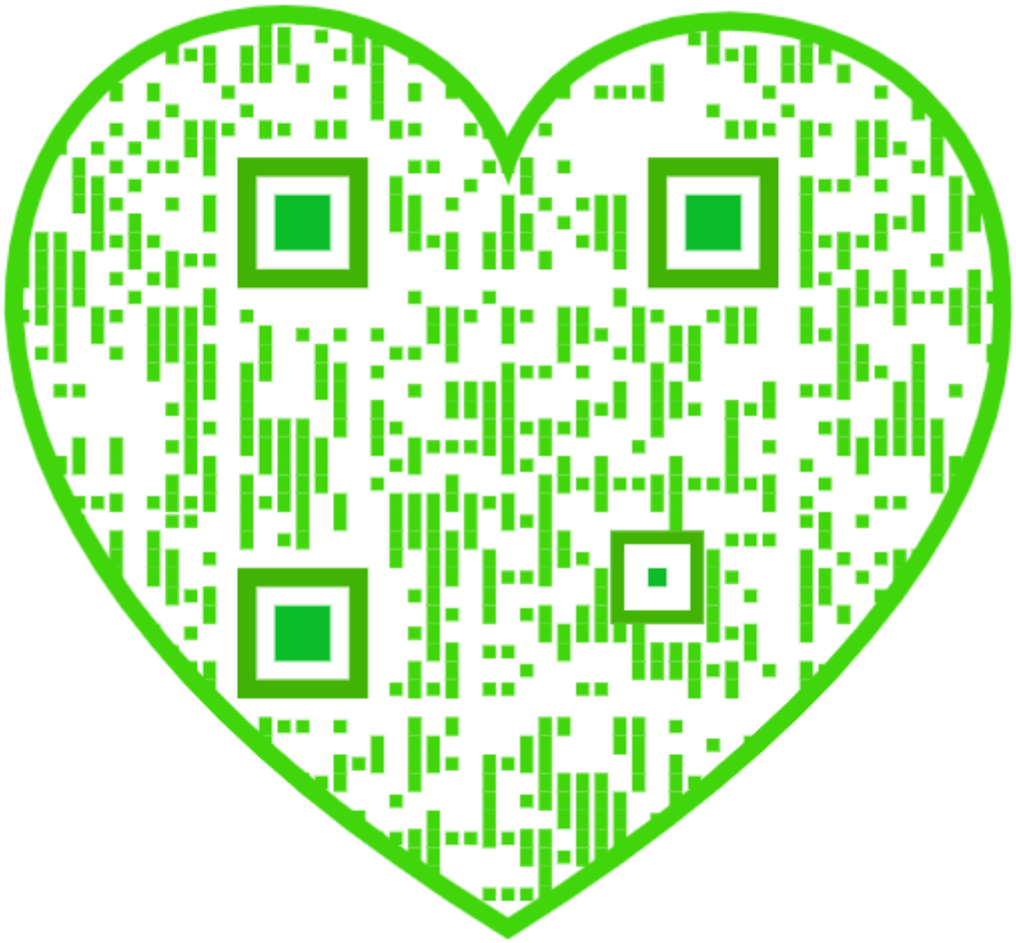

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Indian Tea Association

COOLIE LINES ON AN INDIAN TEA ESTATE

TEA

CHAPTER I

WE CHAT OVER A CUP OF TEA

All of you, I am sure, have many pleasant recollections of tea-parties. At a festive gathering of this kind, you first met the someone who is now your greatest friend ; or you learnt how to play some game which has become your favourite pastime ; or you were recommended to make the acquaintance of a book, which has since been a constant source of delight to you.

I hope that to-day's party, at which I have the pleasure of being your host, will be the means of adding much that is interesting and amusing to your store of happy memories. Over our tea, I am going to talk to you about tea, and if you come to feel that you would like to know more about this popular commodity, I want to arrange to take you for a holiday tour among the countries that are the native or adopted homelands of the tea-bush. Briefly to sum up my object in asking you to tea with me to-day, I am longing to awaken in you a keen desire to see with your own eyes the surroundings amidst which the tea-bush lives, the treatment by which it is reared, the mode of life of the people who tend it, and the series of transformation scenes whereby a little green leaf is made ready for the

teapot by being shrivelled into a form with which you are all familiar.

Can you recall the time when you first began to take an interest in tea ? Let me try to assist your memory. Am I not right in thinking that all of you, like myself, can trace back the origin of that interest to nursery days ? You remember how much you wanted to taste and try the contents of the cups that were handed to big brothers and sisters, in those days when your cup was filled with milk and water ? At this stage in your life, you were ready enough to ask such questions as :

" What is tea ?"

" Why is tea bad for children ?"

And maybe you made the latter of these very general inquiries more of a puzzle by adding some such remark as :

" Nurse couldn't play with us this afternoon because she had a bad headache ; but she was all right after tea, and then we had fine games. Was it the tea that made her well, mother ?"

At last came a birthday, or some other festive occasion, on which you were promoted to drinking tea. For a few days after, you impatiently awaited the coming of teatime as a treat-time, but the regular repetition of the treat quickly led you into the habit of regarding a cup of tea as a very ordinary part of the repast which is named after it. Whilst getting used to tea as a beverage, you learnt to like it more and more ; at the same time, you came to think slightingly of tea-leaves as the mere refuse of a teapot.

As a first step towards reawakening your intelligent interest in tea as a product, I will ask you to imagine that you have before you a collection of tea-leaves.

So accustomed have you become to the popular and limited meaning of the name "tea-leaves," that my request has called up before your mind's eye a damp mass of flabby, brown bodies, that have been drowned in a teapot. Do not blot out this somewhat unpleasant picture, for in a moment it will help to serve a very useful purpose. Here, now, is a picture of those same bodies as I can see them in their natural state ; they are young but strong-looking green leaves, living on the summit of a bush in a sunny, Eastern land. Look at these companion pictures of the same tea-leaves, letting your eyes linger now on the one which shows them in the heyday of their career, now on the other which tells of a journey ended and a purpose served ; and as you look, think quietly by yourselves for a few minutes. You should find it quite easy just now not only to think, but to give rein to your imagination ; for you have been drinking tea, which is a tonic with the magical power of persuading people to make the very best of their faculties. . . .

What is the result of your reflections ? I feel certain that you are now thinking of tea-leaves not as refuse, but as the prime source of tea ; and I am equally sure that there are a thousand and one questions you want to ask me, all in a breath, about the tea industry. I will tell you the chief events that make up the past history of tea ; then, if you will accept me as your guide, I will take you to places where you can gather first-hand information by the easy and pleasant method of watching how things are done.

CHAPTER II

WE CONTINUE OUR CHAT OVER A CUP OF TEA

The tea-plant, which belongs to the Camellia family of vegetation, is a native of the Far East; but there is considerable difference of opinion as to whether China or India has the honour of being its homeland. There are several varieties of the plant, the principal being the Assam and the China, which two are closely associated with the dispute between India and China.

According to certain statements made by ancient Chinese authors, the tea-plant was growing in the Celestial Empire as early as about 2700 B.C. Moreover, there is a Japanese legend which credits China with being the home of the tea-plant. India, on her side, cannot produce any legendary or historical evidence to support her claim that hers is the honour of being the original home of this plant; nevertheless, she can back her case with a very sound and appealing argument of the "seeing is believing" character.

The tea-plant has been found growing wild in the Province of Assam, in India. True, this important discovery was not made until the early part of last century; but as the plant was certainly a wild inhabitant of the forests of Assam in the nineteenth century, and was then found to be occupying large tracts of primeval country in this Province, it is more than likely that it has been flourishing on the same ground from time immemorial.

Consider now another important fact: no tea-plants have been found growing wild in China, and the ancient

history references to tea-plants in this country do not speak of them as being indigenous to the soil of the Celestial Empire.

And there is yet another important piece of evidence that favours India's claim; the variety of tea-plant commonly known as "China" has been carefully compared by experts with the principal variety of the plant that was found growing wild in the Assam forests, namely, *Camellia Thea*, or *Thea assamica*. As a result, the expert opinion has been expressed that the "China" variety is probably the Assam variety, changed almost beyond recognition as such by centuries of over-cultivation, hard pruning, and rough plucking; indeed, *Thea assamica* is now generally considered by botanists to be the parent stock of all cultivated varieties of the tea-plant.

Once upon a time, therefore, more than five thousand years ago, it would seem that a Chinaman penetrated the forests of Assam, discovered the tea-plant, and introduced it into his native land. But for so long after this was India ignorant of the treasure which had been given her by Nature, that she actually began to experiment in the cultivation of tea with seeds and plants imported from China, before she discovered that she could obtain ample supplies for her nurseries from her own forests.

To China, apparently, belongs the honour of discovering that a beverage could be made from the leaves of the tea-plant. At what date she first began to turn the leaves to account is not known; but she had certainly learnt how to make use of them as early as the fourth century B.C., for a Chinese author writing at this period speaks of a beverage that could be pro-

duced by steeping the leaves of the tea-plant in hot water.

You are, I am sure, feeling very curious as to the circumstances under which tea-leaves were found to contain nourishment. On this particularly interesting question history throws no light, so we are free to romance. Let us imagine that we are in the heart of a tropical forest, thousands of miles away from any centre of civilization. For provisions, we are entirely dependent on forest supplies. When we are hungry we must go a-hunting with bow and arrows, or make search for roots and fruits ; when we are thirsty, we must try to find our way to a river or creek. There is no one to tell us which roots and fruits are good to eat, which are poisonous ; in sampling a new variety we may meet our death, or we may discover a fresh product that is very tasty and nutritious. But the pangs of hunger are keener than our fear of poison, and as, thanks largely to instinct, we go on eating this, that or the other day after day without coming to any serious harm, we get more and more courageous, and find means of making our fare more and more varied. And this life we are leading makes us hit upon numerous devices for adding to comfort or avoiding discomfort. For instance, we are very thirsty ; for hours we have been forcing our way through a thick tangle of undergrowth, searching in vain for water. In desperation, someone picks a leaf, puts it in his mouth, and finding that he gets some relief by chewing it, advises the rest of us to follow his example.

We have had but a mere peep at life in the wilds, but it is enough to add to our enjoyment of tea, for it suggests that the leaf of the tea-plant was found to

yield refreshment by some traveller who penetrated the forests of Assam, or, maybe, the discovery was made by an enterprising savage. In similarly romantic surroundings, and under the stimulus of hunger, thirst, desire for comfort, or curiosity, were discovered many of the raw materials that are the foundation of some of the world's great industries.

To China belongs the honour of teaching the world to drink tea. The beverage became popular in that country during the sixth century A.D., but it was not until late in the sixteenth century that Europe began to sample it. The product first came to Great Britain, from China, in the early part of the seventeenth century, and fetched ten guineas per pound. By 1660, England had so far acquired a taste for tea that the beverage was served in London coffee-houses, those famous old meeting-places for the business men, scholars, wags and gossips of that period; Pepys, according to his "Diary," first tasted it at one of these resorts. In 1664 the English East India Company sent a present of some tea to Queen Catherine, wife of Charles II.; so kindly did she take to the new beverage that Society began to patronize it, and it became the fashionable drink. But only the wealthy could afford to be fashionable, for tea was then costing about 60s. per pound. During the next hundred years larger quantities were imported from China, and as it became less of a novelty the price fell; by 1740, it could be bought for from 7s. to 24s. per pound, according to quality.

The rapid rise of tea to popularity dates only from about the middle of last century. The supply then began to increase by leaps and bounds, and the price to fall, as a result of the British Empire entering into

competition with China in the matter of tea-growing. The first British tea-plantations were laid out in India in 1833, and by 1854 Indian tea had won considerable favour in British markets. India's success induced other British colonies to plant tea, and the annual output of the product by all competitors became astoundingly large, the selling price was brought down by competition among the producers, and the demand grew not only because tea could be purchased cheaply, but because people of many nationalities and all classes rapidly learnt to appreciate both the flavour and the beneficial properties of tea as a beverage.

CHAPTER III

EN ROUTE TO A CEYLON TEA ESTATE

THREE weeks have gone by since we met for a chat over a cup of tea, and decided to take a trip together to the tea-producing parts of the world. Meanwhile we have had such a happy and interesting time aboard a P. and O. steamer, that now we are about to go ashore at the first port of call whence we can travel in comfort to a tea-plantation, our feelings are divided between excitement over treats in store and sorrow at leaving the ship.

Three weeks ago, the shipmates to whom we shall soon be saying " Good-bye " were all strangers to us, we were strangers to them, and most of them were strangers to each other. Yet before the English shore had vanished from sight, all this good ship's passengers were on friendly speaking terms. The Bay broke the ice—or, rather, the thought of it. Would it be very

A TEA PICKER IN NEPAL

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rough ? everyone wondered aloud. The Bay happened to be as smooth as a pond—mascots of all descriptions were brought in to dinner, the owner of each quaint gewgaw was certain that his lucky treasure had brought calm weather, and peals of laughter echoed through the saloon Since that festive night the time seems to have flown—the sunny days in the Mediterranean, the Arabs coming on board at Port Said and turning the upper deck into an Eastern bazaar while we lay at anchor, the journey through the Suez Canal with the desert exercising its mysterious charm, the straining of eyes to catch a glimpse of a camel and the rubbing of eyes to make sure that the caravan of camels was not a dream, the exit from Suez into the great ocean, another series of days at sea, and a succession of sports, dances and happy family parties—such is the crowded panorama of delightful memories that pass through our minds and before our eyes, and make us regret that we are leaving the ship which has given us our first glimpse of many new lands, and the people with whom we have made merry, shared impressions, and found numerous interests in common.

No matter how attractive an object the traveller may have in view when he sets out on a long sea voyage, it is likely to be banished to a back place in his mind by the distractions of the journey. And however strong may be his determination to study, during that voyage, books dealing with what he is going forth for to see, it is more than probable that he will barely open a single one of the treatises he takes with him—the sea tempts everyone to play the happy loafer. We have been unconsciously doing our best to prove these general rules as to the influence of the sea ; from the

time we left the home docks, until this hour of arriving at our foreign destination, we have given no serious thought to the object of our trip.

But now we are reminded of our quest by a very effectual medium of suggestion. See, yonder is the land of Ceylon. When, in our infant days, we asked "What is tea?" were we not told that "It comes from India, Ceylon, and China"? Moreover, in our elementary schooldays we learnt that Ceylon is an island to the South of India, noted for tea. As a result of being fed early in life on these easily digestible scraps of knowledge, did we not grow up with the idea that there was a Siamese-twin relationship between Ceylon and tea?

Whilst we are nearing Colombo, the political and commercial capital of the island, I want to give you some idea as to how important is the part that has been played, and is being played, by Ceylon in the tea industry. Ceylon ranks a very good third amongst the tea-producing countries of the world, when she is placed solely by the test of quantity. The superiority of India and China under this test condition is shown by the official records of the annual competition for the world's custom. For instance, in 1909 India exported 234,796,000 pounds of tea, China during practically the same period exported 199,733,000 pounds, and Ceylon 192,887,000 pounds.

Valuable light is thrown on Ceylon's status as a competitor in the quantity test by the achievements of the other principal tea-producing countries during the same year. Japan took fourth place, but as she only exported 40,579,000 pounds she was, as you can easily see, very far behind the leaders; Java was fifth with

35,882,000 pounds and Formosa sixth with 23,285,000 pounds. Even if the exports of Japan and Formosa be added together and credited to the Japanese Empire, since the Island of Formosa is a Japanese possession, Japan can only claim to be fourth in the running on the strength of a total export that was less than one-third of Ceylon's contribution to the world's supply of tea.

But Ceylon's rank as a tea-producing country cannot be fairly estimated by a mere comparison of her output with that of India and China, nor does her interest in this rôle depend entirely on the bare fact that she is able to take such a good third place in the quantity test. There are a few more facts I want to put before you, and I hope you will often give them a thought when we get among the Ceylon tea-lands ; they will help you to start forming, on a fair basis, your own idea as to the position of Ceylon in the tea industry. But I must warn you that it is not possible to arrive at any just estimate of the importance of any one country to that industry until you have seen what is being done as regards the cultivation and manufacture of tea by all the countries that are producing the commodity, and have studied the character of the countries that consume it.

Tea was first cultivated in Ceylon in the sixties of last century. The first export of 23 pounds was sent to London in 1872. By 1880, the Ceylon export had risen to 115,000 pounds ; by 1883 the figures expressing its output ran into millions, by 1887 into tens of millions, and by 1896 into hundreds of millions. In 1911 the export amounted to 187,674,990 pounds, a total which beat all Ceylon's past annual records with

the exception of that of 1909. In 1880-81 there were 13,500 acres of land in Ceylon planted up with tea ; on 1,750 acres the plants were in full bearing. By 1911, Ceylon had 395,000 acres under tea, and 386,000 acres were in full bearing. The bulk of Ceylon tea used to come from plantations in the low country, but the best quality tea was that grown on the hills. In 1904, Ceylon began to take a keen interest in rubber-growing, and in the course of the next few years thousands of acres of tea-bushes were interplanted with rubber; the experiment was made chiefly in the lowlands, because the native home of the rubber-tree—in Brazil —is in low country. The rubber has thrived, but only at the expense of the tea-bushes, which have been choked to death, or seriously enfeebled, by their new neighbours growing up into big trees and depriving them of light and air. Nevertheless, the production of tea has been kept on the increase by the more and more extensive cultivation of the tea-plant on the hill-sides ; and nowadays the up-country regions yield not only the best quality Ceylon tea, but the bulk of the whole island's output. At the same time, therefore, that the exports are increasing, there is a tendency for the average quality of Ceylon tea to become higher. The average price realized in the London wholesale market by this British-grown tea in 1908 was 7¾d., in 1909 and 1910, 8¼d., in 1911, 8¾d. ; the average price of Indian tea has, up to the present, inclined to keep a trifle ahead, but so close is the quality competition that during 1908, Indian and Ceylon teas commanded the same average price in the London market.

One last word before we go ashore. Remember, when you see tea growing in Ceylon, that it is not a native

A TYPICAL HILL-SIDE TEA PLANTATION

of this country. You will, I am sure, be particularly interested to find what a good "settler" it can be when the soil and climate of a foreign land are such as its nature demands, and it is given careful attention.

We are landing at Colombo in time to catch the morning train up country, and we can save many valuable hours by continuing straight on with our journey to the estate on which we have been invited to stay. So we get into rickshaws, and tell the quaint-looking ragamuffins in the shafts to take us to the station.

CHAPTER IV

EN ROUTE TO A CEYLON TEA ESTATE (*continued*)

The estate for which we are bound is situated high up among the mountains of Ceylon. We could reach our destination to-night, but this would mean a very fatiguing journey, and we should pass through some of the most beautiful of Ceylon scenery in the dark. So I have arranged that we break our journey at Kandy, where we shall arrive in time for lunch.

Soon after leaving Colombo, the train begins to climb. You have heard of the famous train-climb up the St. Gothard? Perhaps some of you have been over that wondrous Swiss Pass. The route up to Kandy is equally adventuresome, and the panoramic setting of the track entitles this line to a place of honour among the finest mountain railways in the world. There are breathless moments when we feel certain the engine is heading straight for the jaws of an unbridged chasm, exciting minutes when our carriage copies the mule's favourite trick of taking the extreme

edge of a steep precipice. Looking out of the window —peering cautiously, for there may be rocks close ahead—we see the train waved throughout its entire length, or swung into a semicircle ; and lo and behold ! landmarks which we first espied perched on hills far above our head, are now away down in a valley, their sites having been dwarfed into hummocks by the height we have climbed above them, and by the loftiness of the mountains among which we are now travelling.

But there are still more wondrous sights to be seen from the window than those which proclaim this railway a fine engineering feat. Those terraces, looking from this distance curiously like the ruins of an ancient Greek theatre, are " paddy " or rice fields ; now we are passing close alongside a grove of cocoanut palms ; a few minutes later, and we are feasting our eyes on banks ablaze with orange-hued jungle flower ; we run through yet another wayside station, where prominent among fancy-dressed loiterers are chocolate-coloured toddlers, clad in silver bangles, silver anklets, and a string girdle hung with charms ; and just beyond this hill-station we come upon a tea-plantation dotted with workers in vivid-hued draperies. Having struck the tea-lands, we very soon become accustomed to seeing the hillsides, to right and left, occupied by tea-bushes ; in orderly array the trim shrubs stand on terraces, inducing us to think of them as well-trained armies of dwarfs marshalled for inspection.

Kandy, our halting-place, is a thoroughly Oriental little town. It was the last capital and stronghold of the ancient Sinhalese dynasty, and less than a hundred years ago it was being ruled by native kings. As we drive up to the hotel, we pass many picturesque folk,

who represent numerous Eastern races and are of various "castes" or classes.

You are thinking that there must be very many more women than men in this place? Wherever you go in Ceylon, you will be inclined to jump to that same conclusion, for this is a land where many of the men wear skirts, and let their hair grow long; in China you will find the women wearing trousers. But here comes a Ceylon character who looks very manly, albeit his costume is so unlike the apparel in which you are accustomed to see men clothed. This well-built, well-favoured individual in white trousers—which are very full to the knees, and thence tightly fitting to the ankles, where they are finished off with a frill—white shirt, and richly embroidered bolero, belt and hat, is a Kandyan chief. For many centuries his ancestors were ministers of the Kandyan kings. You must not expect to find such aristocratic coloured personages engaged in the business of preparing tea for market. Indeed, only a very minor part in the Ceylon tea industry is played by the "people" of Ceylon. These are composed of three races—viz., the aborigines, or Veddas; the Ceylon Tamils, who, it is believed, originally came over from Southern India in the remote past, and conquered the north and east of the island; and the Sinhalese, who originally came over from India in the sixth century B.C., conquered the Tamil settlers, made themselves masters of the country, and were only subjugated as recently as 1815, when the British completed their conquest of the whole island by capturing Kandy.

The staff attached to a Ceylon tea estate consists of a manager, two, three, or half a dozen assistants,

according to the size of the estate, an engineer, and a number of labourers called "coolies." The manager, who is usually an Englishman or a Scotsman, is generally spoken of by white people as the planter; among the labourers he is known as the *Peria Dooray*, which, translated from Tamil into English, means "big gentleman." He has his own bungalow, and on large estates, such as the one to which we are going, the planter's bungalow is a spacious, well-built, convenient residence, of country-seat rank. The assistants are also Britishers; they chum together in a bungalow. Some of them are qualified overseers, others stand in the relation of pupils to the planter and assistant-master to the coolies. The pupils are officially known as "creepers," but among the coolies every assistant is a *Sinna Dooray*, or "small gentleman." In all parts of the world, more especially in districts off the beaten track, the enterprising Scotsman is to be found looking after the machinery that plays such an important part in the preparation of natural products; he is frequently the planter's right-hand man so far as an estate's factory is concerned. The bulk of the labourers in field and factory are Tamils from Southern India. The Estate Tamils and the Ceylon Tamils are very different people to-day, although in all probability they were originally of the same race. The Ceylon Tamils, descended from ancient settlers in the island, are superior-class coloured folk. The Estate Tamils are present-day immigrants, who represent the very poor populace of Southern India. One of the men on whom the Ceylon tea industry is most dependent is the *kangany*, who is practically commander of the labour force. The *kangany* is an enterprising native—

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PRUNING TEA IN CEYLON

"native" being a popular name for a coloured man of any race, class, or creed—who serves the planter in the double rôle of recruiting-sergeant and sub-overseer. He makes periodical journeys to India to arrange for new batches of Tamils to emigrate to the Ceylon tea-lands; he brings his recruits to the particular district which is his headquarters, and sees them settled on this estate or that; and until he is again wanted to go off recruiting, he joins the staff of some plantation, and takes up the duties of teaching the new hands their work, and of seeing that a certain gang of the old ones are kept up to the mark. The *kangany* can, to a very great extent, please himself as regards which planter he will provide with recruits, and he has considerable influence in the matter of arranging for the transfer of a coolie from one estate to another. Tamil men, women and children, work for the planter; their quarters are called "coolie lines," and are long buildings of the bungalow type, which are partitioned off into family residences.

"Are there any Estate Tamils in Kandy?" you are wondering.

Yes, a few have drifted here to take some lowly part in town life. There is one running in the shafts of a rickshaw. You notice that he has long hair twisted up into a "bun," and that round his waist, hanging skirt-fashion, is a piece of brightly coloured cotton stuff. And there, crossing the road, is a Sinhalese, as witness the big comb which almost encircles his head, and which he seems to have fixed in his hair hind part before. You will come across a few Sinhalese among the tea-workers in Ceylon, but only a very few. They are not fond of regular work, but they will take part

in jungle-clearing, which has only to be done at intervals, and they are experts with the axe.

Whilst we are having lunch at the hotel, overlooking Kandy's beautiful lake among the hills, I want to tell you something of importance about the estates in the Ceylon highlands. Ceylon, having proved by experiments that rubber would grow in this country on heights up to about 2,000 feet, began to plant out rubber seedlings on the hillsides as a commercial venture. As a result of this enterprise, she has already increased her power as a competitor in the popular new industry of plantation rubber ; so much so, that more and more acres on the lower slopes of her hills are being transformed from tea-lands into rubber lands. Some of the up-country estates have tracts of rubber-trees which are already yielding milk ; and opposite the factory where the leaves of the tea-plant are dealt with, there is now a factory where the rubber milk is turned into a solid material. On other plantations, young rubber-trees are growing up amidst the tea bushes, and within a very few years the dwarfs will be ousted by the giants, as was so recently the case in the lowlands.

CHAPTER V

EN ROUTE TO A CEYLON TEA ESTATE (*continued*)

Will tea remain the staple product of Ceylon ?

That is the question which is interesting many people to-day, particularly those who have business interests in the tea trade of other countries. And Ceylon's reply is, on the face of it, a very hopeful one, both for people who do business in Ceylon tea, and

those who are only concerned about its welfare because they prefer the taste of Ceylon tea to that of varieties grown in other lands. She points to the fact that while she has been building up a trade in a new product, her annual export of tea has continued to increase.

Nevertheless, it must be remembered that Ceylon is a small island. Its area is less than half that of its great British rival, the Province of Assam ; infinitesimal in comparison with that of China ; and very much less than that of some other countries which are making great efforts to popularize their tea, extending the area under cultivation to meet an increasing demand, or contemplating plans for winning their way into markets where their particular variety of the product is not yet known. Although Ceylon has, up to the present, more than made up for diminishing the area under tea in the lowlands and uplands by increasing the area under tea in the highlands, there is an artificial, as well as a natural, limit to her possibilities of making virgin highlands compensate for the transformation of old tea plantations into new rubber plantations. The tea-bush will grow on heights up to about 7,000 feet. But nowadays, when the Ceylon Government sells land, the stipulation is made that no clearing shall be done above the height of 5,000 feet. The wholesale clearing of jungle was threatening to affect the rainfall, and as the prosperity of agricultural Ceylon depends so largely on rain, it was considered of the utmost importance to protect the forests even at the expense of agricultural expansion.

However, obviously Ceylon is confident that she can continue to increase her annual export of tea ; for she is making a novel bid for new customers. Her latest appeal is being made straight to the public, through the

medium of a tea-house at the Imperial Institute, London ; everyone is invited to go there, on any day of the week, and drink a cup of Ceylon tea. It is believed that all connoisseurs among the guests will come to the conclusion that the quality of Ceylon tea has greatly improved, as a result of the hive of cultivation being now in the highlands instead of the lowlands ; and that many of the guests who have hitherto ordered " tea " from their grocer, and left him to supply any variety at the price named, will henceforth order Ceylon tea, and see that they get it.

We spend the remainder of the afternoon at the world-famous Botanical Gardens at Peradeniya, which are within driving distance of Kandy. I can quite sympathize with your desire to go everywhere, and see everything at once, in these lovely gardens ; but time presses, so we must remember that we have come hither expressly to see what the scientists are doing to further the interests of the Ceylon tea industry, and must therefore turn a deaf ear to the call of the beautiful tropical flowers and of other alluring tropical crops. An expert enthusiast shows us round the tea section. All the bushes we see here, he explains, are mediums of experiments, the object of all such experiments being to obtain the biggest possible yearly average of best quality yield per acre. Some of the plants, he tells us, are giving a yearly average of 4,000 to 5,000 pounds of leaves per acre ; that is to say, about 1,000 pounds of marketable tea, since from 4 to 5 pounds of fresh leaves go to the making of 1 pound of dried and baked material for the teapot. The experiments have to do with such matters as the selection of seed, manuring and pruning. Our attention is specially

drawn to plots of "green manures," vegetarian food in a natural form ; some of these plants, we are informed, have been brought from other countries, and are now undergoing the test as to the value of their nutritive properties and as to their taste or distaste for foreign soil.

Back to the hotel—dinner—early to bed . . . early morning, and we are once more in the train, being carried up and up to the great hill centres of tea cultivation. Now, indeed, we are amidst the tea-lands of Ceylon—hour after hour, as we journey on our way, we see mountains ahead of us rising tier behind tier, the while mountains to right and left of us present a high climbing wall and here gather at our feet into a mammoth bowl, bedecked round the inner rim with fantastic forms in bold relief ; and all these mountains we see around us bear a rich burden of flourishing tea-bushes.

We alight at the up-country station of Haputale, where we find coolies awaiting us with rickshaws ; and within a few minutes we are being jog-trotted along a well-made road, that corkscrews its way up a steep incline. On one side, this road is flanked throughout its entire length by a mountain-wall, on the other, it hangs on the edge of a precipice ; the rickshaw coolies hug the precipice side, but even if any of us could speak their language fluently, nothing we might say would break them of the habit for more than the next minute or two, and it would be more wearing to go on repeating the same command than it will be to brace our nerves so that we can enjoy this little adventure in the way of a journey.

Let me tell you a story about this same road. So

far as surface is concerned, it is a fine motor-track, and as it is just wide enough to take a fair-sized car, a motor can scale it, provided the engine is good and powerful, and the driver has sufficient nerve to steer a safe course. The first car to come up this road belonged to Sir Thomas Lipton ; it was driven by an experienced English chauffeur, and carried the owner, who was going on an inspection visit to one of the well-known firm's tea estates—the same one for which we are bound as sightseers. The car arrived safely at its destination, but the chauffeur's face turned white as he sprang from his seat, and his limbs began to tremble. British pluck had made him stick to his post, had controlled his nerves and steadied his hands on the wheel until he had brought his job to a successful finish ; but now that a reaction bearing testimony to that pluck had set in, he exclaimed : " No amount of money would persuade me to drive up here again."

On his next visit to the same estate, Sir Thomas again came up in a car, but this time the chauffeur was a native. The road had no disturbing effect on the new driver ; he was so accustomed to mountain roads, that although this track was probably much more hazardous than any he had previously taken a car along, he did not give a thought to danger—thereby considerably minimizing the risks. Impressed by the cool way in which he came through a feat that had strained the nerves of a very competent English chauffeur, his master took him to England. And so terrified by the London traffic was this " treasure," that in taking a car along Piccadilly, he entirely lost his head, stopped in the middle of the road, and weepingly declared that he dare not go any farther.

Just now this story has a moral, which may serve as an excellent nerve tonic. The rickshaw coolies are not at all likely to stumble and drop you over the precipice, although they might very probably have an accident if they were wheeling you in a bathchair along the sea-front at Brighton.

Fear being banished, we can each of us lie back in our cosy carriage, and enjoy the beautiful mountain scenery and fresh air. All too soon this two hours' journey through tea-gardens comes to an end. But as one pleasure becomes a memory, another pleasant experience falls to our lot. Now we are standing on the threshold of a picturesque bungalow, facing a spacious room, which, at a glance, makes us feel that we have found a most comfortable English home in the wilds of Ceylon ; and, in the name of Sir Thomas Lipton, we are being welcomed by the *Peria Dooray* as guests who are to see anything and everything they wish of the life on Dambatenne Tea Estate.

CHAPTER VI

LIFE ON A CEYLON TEA PLANTATION

Into your dreams comes the sound of a horn. Do not bestir yourselves ; the morning is yet very young. It is only half-past three, says the clock, and no one takes any notice of the watchman's first call to shake off slumber.

Half an hour later, a second horn-blast echoes through the hills ; it, too, is born to die away unheeded. This day in the life of the tea-workers, in which you have come to take part, is not yet at its dawn ; you may sleep on without missing anything you want to see.

At half-past four, the horn sounds a third reveille, and this time there is nothing half-hearted in the summons to be up and doing ; a warning growl merges into a loud command, which resounds with shrill persistence. The " lines " begin to show signs of activity ; men, women and children rise from their mats, fires are lit on earthen floors, pots and pans are balanced on the faggots, and every member of the vast labour battalion attached to the estate is soon breakfasting on the remains of last night's curry. Meanwhile, the managerial staff have risen to prepare for duty. And now you and I must join the awakened world, although darkness still tries to persuade us it is not yet time to get up ; but further delay would make us too late for the roll-call, the first scene of outstanding interest in the work-day history of life on a Ceylon tea plantation.

As we dress, we have " early tea," which is to say a good enough meal to fortify us for several hours to come, and a little before six we join the *Peria Dooray* in the gallery of the bungalow. Together we make our way through a garden beautiful, where bowers of English roses and patches of sweet-scented violets flourish amidst a profusion of tropical blooms ; striking the tail end of a path through the tea-bushes, we head for the muster-ground, a few hundred yards distant.

For a couple of minutes we seem to be very far away from the busy world ; the landscape is a deserted country scene, a medley of grey-green hills peering through grey-blue mist, and arousing admiration that is near akin to awe. Then, so suddenly is a transformation effected that many of you exclaim, " Look, look ;" and no wonder you are excited. The scene has now become a blaze of colour, and in the midst of

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WITHERING THE FRESH LEAVES

1. IN FORMOSA 2. IN CEYLON

it there has been revealed a stage that is thronged with men, women and children in fancy dress attire. The sun has risen just as we have come in sight of the muster-ground. The Tamil crowd, that has collected on a tableland platform, consists of bare-footed figures, whose brown bodies are semi-clad in bright red, green, blue, or yellow draperies; a few bits of white clothing—here some man with a white loin cloth, another with a length of white cotton stuff hanging skirt-wise from his waist, another with a white kerchief knotted about his head—emphasize the gorgeousness of the colour display. You begin to feel that this must be a holiday crowd, that all these people must be going for a picnic; and you cannot quite get rid of this idea even though you hear a very business-like-looking Englishman calling the roll from the steps of a very businesslike-looking building. When, presently, you see these folk on yonder hills, you will find that those big baskets, which so many of them are carrying, are not luncheon-baskets; that the glad rags and jewels they are wearing have not been put on in honour of a holiday; that the leisurely way in which they move off when they have answered to their names does not betoken a leisure day ahead. Nevertheless, when you have actually seen these people at work, you will feel that your first impression of what the day had in store for them was after all not very deceptive. Compared with a coal-mine, for instance, or a city office, all tea-plantations are pleasure-grounds. Most of the hands are out in the open all day long, and their tasks are light; and those employed in the factories get an abundance of fresh air, are in scrupulously clean surroundings, and have little or no really hard work to do.

While our guide is talking business with one of his assistants, I want to tell you about the first steps that are taken to transform a tract of wild country into a tea-plantation. In many parts of the world, besides Ceylon, the virgin lands suitable for tea cultivation are covered with jungle—the tea-clad hills by which you are now surrounded were once occupied by forests. Whenever a tract of such land is going to be put under tea, a clearing has to be made. First the undergrowth is cut, then the trees are felled. When these preparations are complete, a light is put to the great mass of unwanted vegetation. A big bonfire is soon raging, and when this has burnt itself out, the jungle tract has given place to a clearing that is strewn with charred stumps and a wreckage of trunks. When the clearing has had time to cool, stumps are extracted, and hoeing and path-cutting are begun. Paths are sometimes narrow tracks, along which it would be difficult for two people to walk abreast; sometimes they are wide enough to be worthy the name of road. The narrow ones divide the land into plots and do a little towards helping people to move about; the broader ones also serve as boundaries, provide accommodating means of access, and are sometimes capable of being used for transport. The width of such a path depends very much on the nature of the country it has to traverse. For instance, the difficulties of making tracks on this estate, which is situated at an elevation of from 3,200 to 6,500 feet, must have been very great, as you will soon be realizing when we start to climb the hills; so arduous is a long walk up the steep paths which corkscrew a beaten track across them, that our kindly host has ordered four sturdy men to be in attend-

ance with a carrying chair, so that we can get a lift, one at a time. Thus you can begin to imagine what a business it was to wedge these paths out of the hill-sides; they are miniature copies of the road along which we travelled in rickshaws to Dambatenne, and you will find the journey along them much more adventuresome—so any of you who cannot trust your nerves to steady your feet had better stay behind.

When a clearing has been made, little tea plants are brought from an open-air nursery and put in this new home, where they are given plenty of room to grow. They are generally put in lines, a distance of 4 feet being left from plant to plant, and a similar distance from line to line. We are just going to visit the nurseries on this estate, for our guide has rejoined us, and is ready to show us round.

A short and easy walk brings us to the district where the young tea-plants are reared from seed. Their nursery is just the kind of place they like in their babyhood—they are cradled in a dell, and are near a stream.

"What do the seeds look like, and how do they grow?" you are wondering.

A tea-bush is a flowering shrub. When in bloom, it has numbers of little white or flesh-coloured blossoms, which scent the air with a delicate perfume. These give place to fruit, which is of a globular form, and has three compartments; and in each compartment there is usually a single seed, which looks something like a chocolate-cream that has had the shine taken off it. Plants grown for seed are kept apart from those grown for leaf, and are encouraged to flower according to their natural habit, instead of being trained to produce a compact and wide area of foliage.

CHAPTER VII

LIFE ON A CEYLON TEA PLANTATION (*continued*)

We now begin to climb, and for the next four hours we are never beyond arm's reach of a tea-bush. During this time we see the plant in numerous stages of growth, learn much about the way in which it is cultivated, and watch the gathering in of the harvest.

Close by the nurseries, we come upon a plot of old bushes, which have been pruned. The pruning operation is a most important part of tea-cultivation. The tea-plant is naturally inclined to grow up into a tree from about 15 to 30 feet high. It is pruned—

To keep it from becoming too tall for the leaves to be easily reached by people standing on the ground.

To encourage it to produce leaves rather than wood, and to induce a fresh shoot of leaves to sprout quickly from a bough that has had its head nipped off.

The first pruning is generally done when the plants are about 2 feet high ; they are then about two years old, and have taken firm root in the spot to which they were transferred from the nursery when they were from six to eight months of age. Henceforth they are generally pruned about once a year, so as to keep them from 2 to 3 feet high. The operation affects the circulation of the sap ; by cutting down the centre stem, the sap is diverted into side branches, which are thus given so much vital energy to produce leaves that not only is the plucking surface of the bush increased, but when the tender top of a shoot is taken, in due course, by the pluckers, a fresh shoot sprouts from the decapitated one.

The particular plot which led us to talk about

pruning also directs our attention to another treatment which frequently has to be resorted to in tea cultivation. This stretch of ground, the home of veteran bushes, has been manured; first, the lines between the plants were forked, and after the soil had thus been prepared to assimilate food, the ground was covered with "green" manure; the next course on the manure menu consisted of basic slag and sulphate of potash; the third course was another covering of green manure, given specially with a view to prevent the artificial manure from being blown away.

The tea-plant is very dependent for health and strength on food and drink. Before talking about its fads and fancies in the way of nourishment, let us see how Nature has equipped it with means of taking nourishment. It has a tap root, which descends straight into the ground to a depth of 8 or 10 feet. This main root is essentially a "grip," which holds the plant firmly in position; it plays no very active part in feeding the plant except in times of drought, when it becomes a highly important agent by absorbing moisture which is then only to be found in the depths of the earth. From the tap root, just below the surface of the ground, radiate arms, which, in their turn, send out branches that spread in all directions; and all the members of this surface system throw out hair-like rootlets, which act as mouths. Through these mouths the plant absorbs its nourishment in a liquid form.

The plant requires a considerable amount of water, but it objects to living in a swamp. When it is grown on low-lying lands, very careful arrangements have to be made for drainage; but, to a great extent, a hill-side plantation has a natural drainage system.

The principal ingredients which the tea-plant requires its food to contain are nitrogen, potash, lime and phosphoric acid. In starting a tea-plantation, it is considered of the utmost importance to select a site with a deep bed of virgin soil that is rich in these ingredients. But even when, as on the highlands of Ceylon, the chosen site has a particularly rich and deep bed of suitable soil when planting is begun, the time will come when the constant demand for nourishment on the part of a continuous crop will tend to make that soil give signs of exhaustion. Certain trees with manuring properties are planted among tea-bushes to provide the soil continuously with a mild tonic—they also serve the purpose of shielding the bushes from the wind. But from time to time the soil has to be given a special meal wherewith to make such food as the tea-plant requires, particularly when the ground has been under tea cultivation for a great number of years.

The chief objects aimed at in the manuring of tea are :

To keep the fertility of the soil up to a high standard.

To keep the bushes healthy.

To increase the yield of leaves per acre.

To improve the quality of tea ; or, in the case of bushes already yielding very fine quality leaf, to make succeeding crops equally good.

Tea-plants are not disease-proof, and there are many insect pests which are very liable to work havoc amongst them. Naturally, they are better able to resist all ills when they are well nourished. Even so, they must be carefully watched, and at the first sign of blight they must be properly doctored. Sulphur is one of

the commonest medicines for their complaints, and they are dosed with it by means of a spray. None of the bushes on the plantation we are visiting is on the sick list, so we do not see any doctoring going on.

We climb on and on across slopes that are gigantic rockeries; and experience cannot call to memory, or imagination picture, more beautiful rock-gardens than such as these, where the all-predominating rock-plant is the tea-bush. Looking back, and a-down the slopes, the landscape effect is often very different, but always very beautiful. The grown-up bushes have such widespread branches that there is a general meeting of neighbours, and all are thickly covered with leaves. As seen from a distance above, a slope occupied by a shrubbery of well-grown tea-bushes seems to be covered with a carpet of luxurious pile, fantastically patterned in restful shades of deep and tender green.

At intervals we come upon a band of children who appear to be playing hide-and-seek among the bushes. As a matter of fact, they are weeding, and upon watching them closely we find they are very skilful little workpeople. They all look healthy and happy, and all of them are certainly very attractive. The boys might be just going to take part in a water frolic—they are in "bathing costume," with a fancy kerchief for cap; and their brown wrists and ankles are encircled by silver bangles. The girls are daintily draped from head to knees, and they seem to be very fond of jewellery, particularly of large ear-rings with dangling trinkets.

On our way up and up we have seen, from the pathway-platform, many people gathering tea. Now we

leave the path and strike off at an angle into the heart of one of the plots where the pluckers are at work.

You have noticed at a glance that most of the pluckers are women and girls, and I expect you are thinking that their work is very easy. If by easy, you mean "light," so far you are right. But if you are imagining that anyone could gather tea-leaves, without any training, without any intelligence, with no qualification except an uncrippled body and at least one hand, you are very much mistaken. Gathering tea-leaves is skilled labour ; and if it is unskilfully or carelessly performed the quality of tea prepared from the crop will be impaired.

The harvest has to be gathered from the young leaf-shoots of the tea-plant, and from these only the top must be nipped off at a particular spot. When the pluckers are told that a "fine plucking" is required, they must take only the bud and two leaves, that is to say, pluck just below the second leaf—under special instructions, only the bud and one leaf are gathered ; for a "medium" plucking, the bud and three leaves are taken ; for a "coarse" plucking the break is made just below the fourth leaf. The bud gives the tip, which is the finest tea. From the youngest, and tenderest, leaves the "Pekoe" class of teas is made. "Souchongs" and "Congous" are prepared from the coarser leaves.

The young leaf-shoots of the tea-plant are called the "flush." The first flush is the original growth ; the second flush is the growth from the axil, or armpit, between leaf and stalk on a first shoot that has had its head nipped off ; the third flush shoots out from the decapitated second, and so on. The first flush is

ready for plucking when the plant is about three years old ; onwards from this time fresh flushes are very frequently being formed as a result of regular plucking, and the plucking area is increased by pruning. In Ceylon, where it is always summer-time, the tea-bushes flush all the year round ; and a new flush on any bush will reach plucking size in from eight to twelve days after the previous crop has been gathered. In the colder climates of China and Japan, the bushes stop flushing with the coming of winter.

The pluckers whom we are watching are gathering in a harvest from which best-quality Ceylon teas are to be made. That is to say, they are plucking " fine " —bud and two leaves. Each one has a big basket on her back, hanging from a cord round her neck. With their sharp, well-trained eyes the women single out from a wealth of foliage the tender young shoots on the bushes before which they stand, and with a deft movement of the fingers and a quick turn of the wrist they break off the top of these shoots at the right place, and toss back the little plucked bits into their baskets.

Three times a day the pluckers " weigh in "—baskets are emptied, leaves weighed, and the weight of leaves contributed by each individual credited to her account in a notebook kept by the assistant-in-charge.

When an estate is situated in lowlands, and particularly when a tract that is being plucked over is near to the estate's factory, the women troop down to the factory to " weigh in." Here, among the high hills, the contents of baskets are collected in sacks, which are carried down by men to the nearest station in connection with an aerial mono-railway-line. The sacks are suspended on this line, and pushed off,

whereupon they rush along down the perilous track which bridges yawning chasms, and find their own way safely to the factory-station.

After we have watched the pluckers for some little time, we make our way to a bungalow, which is perched on the summit of a neighbouring peak. Here we do full justice to a very good breakfast, and soon we are feeling as fresh as when we started out on our journey. But although we are much looking forward to seeing the factory, it is with regret that we turn our backs on the little châlet, whose warm hospitality we shall ever remember, and on the magnificent panorama which it overlooks.

Some of the most adventurous of you are thinking that you would like to travel back by the aerial railway ? Once upon a time a new assistant, a sportive and sporting young " creeper," thought likewise. He suspended himself on the line by a wonderful apparatus of his own invention, that was intended to hold him up comfortably, and limit his speed—for his own unchecked momentum might lead to a fatal smash at the journey's end. When he was about midway between the termini the apparatus played the part of break much too effectually, and for a very long hour he was hung fast in space, with his feet dangling more than a couple of thousand feet off the ground.

CHAPTER VIII

A CEYLON TEA FACTORY

Tea leaves harbour various ingredients which make the beverage that can be obtained from them by infusion a pleasant and refreshing drink. Foremost in

Indian Tea Association

ROLLING THE LEAVES BY MACHINERY

importance amongst such ingredients are an essential oil, which gives the beverage its flavour, and an alkaloid known as theine, which gives to the beverage its stimulating power.

The object of subjecting the natural leaves to a process of manufacture is to preserve these ingredients, and to make it possible to extract their best qualities quickly and simply.

The principal operations in a tea factory are :

1. Withering.
2. Rolling.
3. Roll-breaking.
4. Fermenting.
5. Firing.
6. Sorting into grades.
7. Bulking.
8. Packing into chests.

Withering.—The leaves are withered in order to make them pliable, so that they will not break up during the next process, which is rolling. A good wither makes them soft to the touch like velvet, or an old kid glove.

In going over the factory at Dambatenne, we first visit the Withering Room, which is situated above-stairs. The scene here is typical of one of the prettiest sights in the industrial world. Many a time after witnessing it, when you are drinking a cup of tea in a house, shop or garden far away from the tea-lands, there will rise up before your mind's eye the picture of a long and lofty room, fitted on each side with row upon row of wide shelves, reaching from floor to ceiling ; on the leaf-strewn pathway between these shelves,

which are laden more than half-way up with shallow trays full of leaves, you will see men in white knee-breeches, white jackets and amber-tinted head-dress, throwing leaves up to the trays on the shelves above their heads. And if it has already been your good fortune to witness a Battle of Flowers, I am sure that, as you stand in this Withering Room, you will tell yourselves you are now watching a Battle of Leaves which is an equally picturesque carnival scene.

In bright, dry weather the leaves are withered by the sun; in wet weather they undergo a hot-air treatment.

After watching a big body of withered leaves set forth on their journey to the ground-floor via a canvas shoot, we take to the staircase and make for the spacious machinery department in which they undergo further treatment. And in visiting one after another of the operating chambers, we see to the finish the various performances, in the nature of transformation scenes, by which tea leaves are prepared for the wholesale market.

Rolling.—The rolling machines serve a double purpose. They bruise the withered leaves to enable the cell juices to become mixed; and they give a curl-like twist to them.

Roll-Breaking.—During the rolling process, the green leaves turn yellowish and get stuck together into little lumps. The roll-breaking machines scatter the masses and again give individuality to the leaves. In connection with a breaking machine there is a sieve, which separates the finest leaves from the coarser ones.

Fermenting.—At fermentation stage, the most critical point in tea manufacture has been reached.

There are no hard-and-fast rules as to the length of time necessary for the desired degree of fermentation, or, more correctly speaking, *oxidation*, to be attained; the weather conditions and the special nature of the leaves under treatment have to be taken into consideration. As "patients" under this treatment the leaves may be normal, or they may prove very stubborn or very docile; and so erratic an agent is the weather, that on a sunny day the operation may be performed in twenty minutes, whilst in cool, wet weather it may take several hours. It is of the utmost importance that the oxidation shall be thorough, but, on the other hand, if it is over-done or under-done the tea is spoiled.

The leaves which pass the finest-sieve test, when the roll-breaker first deals with a mass, are slightly moistened and oxidized without further preliminary treatment. The coarser leaves are again dealt with by roller, roll-breaker and sifters before they, too, are moistened and left to oxidize.

For oxidation purpose the leaves are thinly spread on mats, or on a floor made of some glazed material, or put into a specially designed nest of drawers to which the air has free access. During this stage of manufacture the leaves turn copper-coloured, and make known that their ingredients combine to form an essence which has a pleasing aroma. The experts who superintend tea-making at this stage judge by colour and aroma when the right degree of oxidation has been reached.

Firing.—When the leaves are sufficiently oxidized, they are baked dry, or, technically speaking, "fired." In an up-to-date factory, such as we are visiting, the firing is done in the very large oven of a patent furnace.

But there are many varieties of firing machines. The most modern have ovens fitted with travelling trays, whereby the leaves are carried automatically through a large, hot-air chamber. The object of drying the leaves is threefold : to prevent further oxidation; to complete the evaporation of natural moisture, so that the tea juice can solidify on the leaves ; and to harden the leaves for their long journey to a teapot. When the leaves come out of the oven they are black ; in fact, the fresh green leaves from the plantation have now been changed into a very familiar form and colour.

Sorting.—The tea has already been divided into two classes by the sifters attached to the roll-breaking machines—fine and coarse. In this factory the more correct descriptions would be " fine," and " less fine," for, as we saw when we were going over the plantation, " fine " plucking is the rule on this estate. But the classes have to be subdivided, which is to say " graded." Sifting machines, with sieves that have meshes of many different sizes, sort the main classes into many sections ; thus the Pekoe, or " top " class of black tea is assorted into Flowery Orange Pekoe—the finest of teas, in which many " tips " are in evidence—Orange Pekoe, and Pekoe No. 1. And any leaves of a certain class standard that will not pass the mesh tests are cut up by a breaking machine, and graded as *Broken* Pekoe, etc. The fragments that remain after grading are sold as " dust," or " fannings."

After assortment, the tea is once more fired.

Bulking.—Bulking is the process by which batches of tea of the *same grade* are mixed together so as to produce a large supply of uniform quality. In the case of Orange Pekoe, for instance, there is likely to be

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Scott & C

BULKING TEA, CEYLON

a slight variation in the quality of the various siftings that fall into this grade—the leaves, you must remember, came from many different plants, and some plants are likely to have been a little better, or a little worse, than others. And when the wholesale buyer purchases a stock of "Orange Pekoe," he must be able to rely on the quality of the whole supply being up to sample. Therefore the batches of Orange Pekoe contributing to that supply must be well mixed together before a fair sample can be taken. In bulking, many baskets of tea of one grade are arranged in a circle round a thick canvas sheet, which is spread on the floor of the packing room. The contents of the baskets are then tilted on to the sheet in a heap, and the heap is well shovelled inside out, and outside in.

Packing.—After bulking, the tea is packed into lead-lined, wooden chests, and is then ready to start on its journey to market.

All Ceylon tea is manufactured by the up-to-date methods which have been specially devised to prevent human hands coming into direct contact with the product.

Most of the teas exported by this island are of the black varieties. Some of the manufactured product known as "green tea" is, however, produced. Green tea is made from exactly the same kind of leaves as black tea, and by a similar process up to the rolling stage. But the leaves are not fermented; they are transferred straight from the rolling machines to copper pans, in which they are roasted. And from the factory they go to a mill in Colombo to be coloured and polished. Fuller's earth plays a very active part in the preparation of British-made green tea, and only

chemically-pure colouring matter is used. When green tea is being prepared for the American market it is not artificially coloured or faced.

Green tea, like black tea, is sifted and graded. The best quality is known as Young Hyson, after which come Hyson No. 1, Hyson No. 2, Gunpowder, and Dust.

CHAPTER IX

INDIA TRIUMPHANT

India set Ceylon the example of cultivating the tea-plant, and from India Ceylon learnt how to manufacture tea. India's pupil has undoubtedly done her great credit, but important as is the position which has been won by Ceylon in connection with the world's tea industry, India's position is still more important, and, from various points of view, more interesting.

India is first in order of general merit as a tea-producing country. I hope that I led you to think this almost at the outset of our journey. For I gave you official figures as to the amount of tea exported during a recent year by the various producing countries, and those figures placed India at the head of the list. China, I would remind you, came second. As I wanted you to have a clear impression that India has the place of honour in the tea world, and as what I am going to tell you now might then have confused you, I simply quoted the plain figures, without comment.

The exact truth to tell, China produces considerably more tea than does India. And although China consumes more of her own tea than does India of her own tea, still the actual amount of the product exported

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1. TRANSFERRING TEA-PLANTS FROM NURSERY TO PLANTATION

2. SPRAYING TEA-PLANTS IN INDIA

by China is much larger than the amount exported by India. But much of the Chinese output is very inferior in quality. A great deal of it could not, and does not attempt to, enter into competition in the open market, but it happens to have found special markets in Tibet and some parts of Russia. This poor product, consisting of twigs and very coarse leaves which undergo a rough-and-ready method of so-called manufacture, is not what the world at large understands by tea; hence it is not taken into consideration in the compilation of statistics for the world at large. And even if China be credited with the whole quantity of her export, India must still be honoured as the superior competitor; for the money value of India's annual export exceeds that of the total annual export from China.

Both countries, however, make between five and six million pounds sterling per annum by the sale of tea to outside customers.

I have told you that the first British tea-plantations were laid out in India in the early forties of the nineteenth century, with seeds and plants obtained from China. Some years previous to these experiments in the cultivation of China tea, travellers had begun to report that a species of tea-plant was growing wild in Assam. By 1834, the Government of India had become so interested in a number of such reports, specimens of the Assam plant in question, and tea culture in general, that a Committee of Tea Culture was appointed to report on the possibility of the supposed tea-plant of Assam being identical with the tea-plant that had so long been under cultivation in China, and to express an opinion as to the advisability of planting

tea on the mountainous regions between Cachar and Assam, along the North-West Frontier, and on the Neilgherries.

The Committee decided that there was sufficient evidence to justify a belief that tea-production could be made a commercial success in India, and forthwith their secretary was sent to China to obtain a supply of seeds and plants, and also to procure the services of some Chinese labourers skilled in the cultivation and manufacture of tea.

But before the seeds and labourers reached Calcutta, further evidence concerning the Assam discovery was placed before the Committee, whereby they were persuaded to believe that not only was the "China" tea-plant growing wild in the forests of Assam, but that the wild tea-plants flourishing there were indigenous to the soil they occupied. Thus it seemed that India was in the very curious position of being about to try to "naturalize" from imported seed a native Indian plant.

At this juncture the Government of India sent to Assam a Special Commission of two botanists and a geologist, personally to study on the spot the nature of the Assam tea-plant and the conditions under which it was growing. As a result of their investigations, these specialists were able to make a more-than-ever startling announcement. The tea-plant was not only growing wild in the country of the Singphoos, as had hitherto been made known, but it had now been found scattered at intervals over the whole of Upper Assam. Moreover, to their surprise, these specialists had discovered that the situation of the plants was usually on the plains. Further, they had discovered

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WEIGHING THE DAY'S PICKINGS

that the tea-plant was not by nature a shrub, but a tree; in some cases the natural-growing specimens were found to be from forty to fifty feet high.

Whilst the Special Commission were pursuing their investigations in Assam, the secretary of the General Committee of Tea Culture was carrying out the instructions with which he had been sent to China—procuring seed and the services of skilled labourers. As an outcome of his labours, there arrived in Calcutta, early in 1836, three Chinamen experienced in the preparation of black tea for the market. They were immediately sent off to Assam, and with their help the first sample of Indian tea was manufactured in British India. Twelve chests of this new variety of the product were sent to Calcutta, and thence shipped to England. The tea had been prepared under many disadvantages, consequently it did not give a fair clue as to what might be expected in the future; nevertheless, the report thereon by London experts was decidedly favourable, and general curiosity was aroused thereby.

In 1838 the public were given a first chance of seeing how they liked Indian tea. A small quantity of this novelty was put up to public auction, and fetched prices varying from 16s. to 34s. per lb. The *Asiatic Journal*, in referring to the reception it met with, remarked that:—

"The decision of the public, however, has not been unanimous. Ladies, particularly those of mature age and judgment, whose jurisdiction in all matters connected with the tea-table ought not to be disputed, were enthusiastic in their praises of the new tea, but many of the lords of creation, especially stout gentle-

men, whose previous habits had better qualified them for discussing the merits of port wine and bottled porter, compared it somewhat irrelevantly to chopped straw, and some were pleased to display their facetiousness by observing that a mixture of gunpowder was wanted to make it go off."

As a result of these experiments with the native tea-plant, India became less interested in the seeds for which she had sent to China. Several thousand plants, however, were raised at the Botanical Gardens, Calcutta, from the imported seed, and were sent to Kumaon, in the Himalayas, and the adjacent provinces, to Assam and to Mysore. For some time experiments were carried on in crossing the Assam and China plants, there being a strong feeling in favour of the idea that a hybrid variety of this kind would constitute the finest stock. But by-and-by India came to the conclusion, which has proved so sound, that her best interests, and those of customers, would be served by a purely Indian stock.

The second shipment of Indian tea was made in 1839. It consisted of ninety-five chests; ten of these were given away amongst people specially interested in the industry, and the remaining eighty-five were sold at public auction on March 17, 1840. This export fetched from 4s. to 11s. per lb.

By 1850, there were about 1,000 acres of land in India under tea, and the total production for the year was about 250,000 lbs. By 1890 the area under tea was 344,822 acres, and the annual production had risen to over 112,000,000 lbs. By 1909, India had increased her tea-growing area to over 555,000 acres and her annual production to close upon 261,000,000 lbs. Since

then, further extension of the industry has brought the area under cultivation up to about 560,000 acres, and the annual output to *over* 261,000,000 lbs., of which as much as 249,000,000 lbs. has been exported in a single year.

The tea districts of Northern India are in Assam, Bengal, North-West Provinces and the Punjab; those of Southern India are in Madras and the native State of Travancore. The Assam plantations make up more than half of the total area under tea throughout all India.

Burma has some tea plantations, but most of their crop is converted into pickled tea, which is not suitable for European consumption.

CHAPTER X

TEA-MAKING IN INDIA

THERE are two classes of tea plantations in India—those situated among hills, and those occupying plains.

The principal hill-gardens are on the lower ranges of the Himalayas, as at Darjeeling, where grows the finest Indian tea; at Almora and Naini Tal in the United Provinces; and in the Simla and Kangra Valley districts of the Punjab. There are also hill-gardens around Chittagong in Eastern Bengal; and in Southern India, around Madras.

The tea districts in the plains are those of Assam, including the Brahmaputra Valley, and the Surma Valley; of Jalpaiguri, in Eastern Bengal; and of Travancore, in the south.

In setting out on our wander-tour among the extensive tea-lands of this vast country, we are induced

to make straight for Assam. Not only are we drawn there first because it has the largest plantation area to be found in any tea-producing region of India, but because it can provide us with the new experience of seeing tea-bushes flourishing on plains. The situation and surroundings of the plants will furnish a fresh spectacular entertainment, and we shall get a general idea of the special difficulties that have to be contended with in the cultivation of tea on lowlands.

Assam proper is a part of the political province known as Eastern Bengal and Assam. Let us take a bird's-eye view of that province as a whole.

An enormous triangle, with its apex to the north-east, has upper and lower sides consisting of mountains and hills, and between them is a depression, which deepens and widens, merges into a base of waterways, and constitutes the body of that triangle. Obliquely through the midst of the depression runs a mighty river, the Brahmaputra, which is joined in its course by numerous streams, broad and narrow, and which in its turn joins the mighty Ganges and helps to form the great Bengal delta. The whole triangular body of this province is thus covered with a network of water-courses. And many of the large, irregular-shaped meshes of that network are occupied by tea-gardens.

The largest groups of such meshes are in Assam proper, which was a separate province until 1905.*

Here, now, is a picture of Assam in the not-long-ago days when the tea-plant was discovered growing wild there. The meshes are occupied by jungle, many of them by jungle-swamp. Nowhere are there any signs

* At the Delhi Durbar (1911) Assam was again made a separate province.

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FERMENTING TEA IN INDIA

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FIRING TEA IN INDIA

of civilization—no towns, no roads, no railways. Practically the only indications that there are any human beings scattered over this gigantic waste are a few rudely-built huts, and here and there on the rivers a primitive-looking boat.

What a very different land is Assam as we find it to-day, thanks largely to the tea-bush, and, of course, to the tea-planters, to the inventors of tea-making machinery, and, in a word, to all the pioneer forces of the British-grown tea industry. This tea-land has been the hub of that industry from the earliest infancy of the enterprise; as we wander amidst trim plantations, travelling in comfort from place to place by river, road or rail, visiting numerous hospitable English and Scottish planters at their "country houses," and being taken by our hosts over estates that keep armies of labourers in constant employment, our thoughts naturally turn to the difficulties that it must have been necessary to surmount in order to transform Assam the jungle-land into Assam the first British tea-land.

In Ceylon we had a little talk about making a clearing ready for the planting of tea. Therefore your imagination will already be at work helping you to picture the Assam forests being cut down and burnt, and having their stumps extracted.

What became of the stumps?

They were dragged away by elephants.

Previous knowledge returns to the aid of your momentarily-arrested imagination. You see seeds being sown in carefully selected plots that have been specially prepared as nurseries, and such work as hoeing and path-cutting being pursued on big expanses of cleared ground.

In thinking of path-cutting, you are reminded that hills have to be terraced, and as you now happen to be on a plain, you are tempted to jump to the conclusion that the business of transforming Assam forest-lands into tea plantations was rendered so much less arduous by reason of terracing not being necessary. But there were highlands, as well as lowlands, to be cleared in Assam. Moreover, the plains were particularly troublesome to drain.

And there were two local conditions which very seriously hampered the pioneers of the tea industry in Assam—the unhealthy climate, particularly in the lowlands, and the scanty population. Natives of other parts of India had to be persuaded to set out for this remote and unknown part of their own vast country ; and recruits could only be sought for amongst such natives as were accustomed to living in a damp district. Again, when a volunteer labour-gang had been enlisted, it was no easy matter to arrange for the conveyance of the workers to the scene of the new enterprise ; the journey from Calcutta, the " base camp," took two or three months, the usual route being by water, and the only available boats being of a most primitive, native type.

But the pioneers of the British-grown tea industry set themselves a still more difficult task than that of solving the complicated problem in connection with the cultivation of the tea-plant in Assam. Fired by the ambition that Indian tea should not only become famous for its quality, but should deserve and win a reputation for absolute purity, they determined that the fresh leaves should be prepared for the consumer by machinery, instead of being treated by hands

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INDIAN TEA: HOEING

and feet according to the Chinese method of manufacture.

Time presses, and we must be making our way to other tea-lands. But before we leave Assam, I want to say a few words with the object of helping you to appreciate all that has been done in various parts of India to further the interests of the tea industry, and generally to benefit the consumer. The foundations of the Indian tea trade were laid by the pioneers in Assam, who so courageously fought against many trying circumstances ; but the growth of that trade to its present flourishing state is the result of work done by generation after generation of equally enthusiastic, hard-working and ambitious agriculturists, scientists, and industrial organizers. Year by year, means of transport have been improved ; notoriously unhealthy regions have been rendered more and more fit for habitation by jungle-clearing, drainage, and the erection of well-planned houses for all grades of employees ; and, generally speaking, steady progress has gradually simplified the business of tea production in India. Nevertheless, even to-day a tea-planter there has to work very hard.

Judging by what you saw in Ceylon, you are, I expect, inclined to think that a tea planter has very little time for play, no matter in what part of the world is the estate for which he is responsible. Hence you are wondering why I have specially drawn your attention to the lot of the present-day manager of a tea-estate in India.

I have already told you that there are two classes of tea plantations in India—those situated among hills, and those occupying plains. By pointing out to you

certain important differences in the two classes of estates, I shall incidentally help you to see for yourselves how it is that some of the planters in India have an exceptionally exacting post to fill.

Generally speaking, the hill districts where tea is grown are healthy—some of them are health resorts. The tea produced in these districts is less in quantity per acre but of finer quality than that from the plains. Although, generally speaking, the plain centres of tea cultivation are much healthier districts than in the days when they were mere jungle-swamps, the climate is apt to play havoc with the health of a white man. In a word, the planter located amidst the plains has to supervise a larger labour force, and look after a bigger crop in order to compete with a hill-estate's planter; and very often he has to work under exceptionally trying weather conditions.

I am not taking you to an Indian tea factory, because the whole method of preparing tea for market in India is similar to the method practised in Ceylon. But in justice to India, I must ask you specially to remember that she set the example of manufacturing tea by machinery, and of taking every precaution to supply the consumer with a clean commodity produced amidst wholesome surroundings.

Now we will hie us to the Celestial Empire, and see how John Chinaman deals with the tea-plant.

A CHINESE TEA-FARM

CHAPTER XI

CHINA TEA

In China, we do not find extensive plantations, owned by a Company, and worked by a manager-representative who controls a large army of labourers. Instead, there is a large army of peasant proprietors, each of whom runs a tea farm, of about four to five acres in size, as a means of livelihood for himself and family.

The principal districts in which tea farming is carried on are the eastern province of Chekiang, Kiangsi, and Fukien ; round and about Hankow and Canton ; and the south-western province of Yunnan.

The method of cultivation and the process of manufacture are old-fashioned, having been handed down from generation to generation.

We have come to the north-eastern neighbourhood, where is produced a large proportion of the green and black China teas for foreign markets. We have just landed at Hangchow, the capital of the province of Chekiang, and, following the programme I have drawn up for our wander-tour in the Celestial Empire, we shall linger awhile in Chekiang, visiting various tea farms in this locality ; next go by steamer to Foochow, whence we can make our way into the rich, tea-growing province of Fukien ; and afterwards take a trip up the Yangtse to the river-ports of Kiukiang and Hankow.

The time of year being early May, the harvest season is in full swing in the green tea-lands of Chekiang. Fathers, mothers, sisters, brothers, little children, and all able-bodied grown-ups, are busy gathering in the

crop, and preparing it for market ; and tiny toddlers are enjoying themselves in fields and sheds, playing at work, and unconsciously learning their first lessons in tea-making.

About a fortnight ago the fields were picked over for the first time this year ; then only the delicate leaf-buds were taken off the bushes, for the purpose of making tea of extra fine quality. Much of the tea prepared from this first crop is kept by the farmers for use on ceremonial occasions, or for presentation to friends, and to anyone—native or foreigner—for whom they have a high regard. The second flush, which is now being plucked, is the all-important commercial crop of the season. A little later on a third flush will be ready ; this will be the last crop of the season, and will produce inferior tea.

In acting as your guide among the tea-lands of China, I am taking you from place to place, and showing you such operations as happen to be in course of progress at the time of our visit ; I shall not attempt to classify the habits and customs of the Chinese tea-farmer into the system he follows until you have collected a series of memory pictures.

We are standing in a small field, amidst a patch of tea-bushes. Our near neighbours are half a dozen women, a man and a little girl. The women are plucking. Their costume consists of loose cotton trousers, a long coat, fastening at the side and embroidered round the neck and sleeves, and embroidered slippers. They have very smooth, glossy black hair, neatly coiled at the back of the head, and cut in front into a fringe that forms a straight, deep band across the forehead. They wear very little jewellery—a

couple of bangles, two or three rings, and a pretty pin ornament in the hair. Each has a basket, wide at the bottom and tapering up to a narrow neck, slung round her waist with a girdle of plaited cane. The child is a wee model of her mother, who has brought her into the field so that she may keep an eye on the little one; already this girl-baby's hair is being trained in the way it should go—the front has been cut fringe-wise, and the back wisp has been pinned up into a little knot. The man is clad in loose breeches to the knees, and a short cotton coat which looks like the upper garment of a smart pyjama-suit. Three parts of the crown of his head is clean-shaven; in sharp contrast to this bald effect appears a wealth of very dark hair, which is tightly braided into a pigtail. You are surprised that he is not showing off his pigtail to best advantage by letting it hang down his back? He has twisted it around his head to prevent it from getting into his way, and to keep it out of harm's way, whilst he is at work; just now he is setting out on a journey to yonder shed with a big, drum-shaped basket, full of leaves which he has collected from the pluckers.

The sun has suddenly come out from behind some clouds—in a moment a mystery is solved. You have been greatly puzzled as to what could possibly be the connection between tea and certain tent-like erections of compressed-cone shape, roughly thatched with coarse leaves; dotted about the ground, they caught your attention immediately you came into the field. As the harvesters put them on their heads, you now discover that these curious articles are hats—a quaint type of *en tout cas*, or sunshade and umbrella combined.

An hour or so later and we are in a cottage parlour.

The principal piece of furniture in this poor apartment is an altar, whereon stands a joss—a well-carved idol of grotesque design—and a jar containing joss-sticks. Near by are several baskets, wherein are fresh tea-leaves, which have been brought hither from the fields.

Another day we find ourselves in a shed which is close by a temple. One side of this outhouse is occupied by a row of basins, let into a brickwork frame ; the basins are large in circumference but not very deep, each being fitted at the bottom with a shallow pan made of thin iron, set in a general lining of cement. At one end of the row is a rude fireplace, at the other end a rough-and-ready chimney, and beneath the pans runs a flue. In these pans fresh tea-leaves are being baked into a state of softness, ready for rolling. It takes about five minutes to cook the crispness out of each batch of leaves, and much stirring of the contents of the pans aids in bringing about the desired change. In another part of the shed we see how the leaves are treated when they are taken out of the pans. Here they are spread on boards, and women and girls are pressing the moisture out of them by treading them with bare feet. Close by are several bamboo tables, covered with softened leaves ; round these tables stand more women and girls, with here and there a man, using their hands—very skilfully, be it noted—to press out the moisture from the leaves and roll them.

Here is another scene which you will, I am sure, often recall : at a table in a cottage parlour sits a little Chinese boy, with a very long pigtail. Before him lies an exercise-book. In his left hand he holds a saucer containing some Indian ink ; in his right hand, a small

1. CHINESE BOYS PACKING TEA.

2. CHINESE BOYS PAINTING TRADE MARKS ON TEA-CHESTS.

brush. He is making up some accounts for his father, in connection with the family's tea farm. The entries he puts in that exercise-book are symbols of very complicated design. So rapidly and neatly does he make these strange characters with his paint-brush, that we are led by admiration of his handiwork to challenge each other to write 1, 2, 3, and a, b, c, as quickly and neatly with pen or pencil.

CHAPTER XII

CHINA TEA—*continued*

CHINA produces very large quantities of green tea of varying qualities; also, she converts a considerable proportion of her annual tea-crop into black teas.

Until towards the middle of the nineteenth century, many people believed that the two distinct classes of tea, green and black, were respectively prepared from the leaves of two varieties of the tea-plant, *Thea viridis*, and *Thea Bohea*. A famous botanist, by name Fortune, finally proved beyond doubt that this idea was wrong.

Fortune himself supported the very theory that he eventually disproved. Prejudiced in its favour, he went to China, and visited the tea-growing districts of Canton, Fukien, and Chekiang. At the outset of his investigations, personal observation provided evidence which was all in support of the theory to which he had pinned his faith. To his delight he found that the black teas of the Canton district were being prepared from the leaves of the *Thea Bohea* plant; and when he went on into the province of Chekiang, a noted centre

of the green-tea industry, he was still more pleased, because here he saw that all the tea farms were planted up with *Thea viridis*. By the evidence of his own eyes he had obtained "proof positive," he thought, that the theory to which he had given his support as a scientist was scientifically sound. And he journeyed on into the province of Fukien, famous for its black teas, fully expecting to find the tea farms there planted up with *Thea Bohea*. Here is his own story, as told in his book "Wanderings in China," of the extraordinary discovery he made in Fukien, and of its bearing on the theory which, up to this stage of his wanderings, he seemed so conclusively to have proved :

"Great was my surprise to find all the tea-plants on the tea hills near Foochow exactly the same as those in the green-tea districts of the north. Here were then green-tea plantations on black-tea hills, and not a single plant of the *Thea Bohea* to be seen. Moreover, at the time of my visit, the natives were busily employed in the *manufacture of black teas*. Although the specific differences of the tea-plants were well known to me, I was so much surprised, and I may add amused, at this discovery, that I procured a set of specimens for the herbarium, and also dug up a living plant, which I took northward to Chekiang. On comparing it with those which grow on the green-tea hills, no difference whatever was observed. It appears, therefore, that the black and green teas of the northern districts of China (those districts in which the greatest part of the teas for the foreign markets are made) are both produced from the same variety, and that that variety is the *Thea viridis*, or what is commonly called the green-tea plant. On the other hand, those black and

CHINESE GIRLS PLUCKING TEA

green teas which are manufactured in considerable quantities in the vicinity of Canton are obtained from the *Thea Bohea*, or black tea. And, really, when we give the subject our unprejudiced consideration, there seems nothing surprising in this state of things. Moreover, we must bear in mind that our former opinions were formed upon statements made to us by the Chinese at Canton, who will say anything which suits their purpose, and rarely give themselves any trouble to ascertain whether the information they communicate be true or false."

The leaves of one and the same tea-plant will, therefore, produce either green tea or black tea, according to the will of the manufacturer. I would remind you that I drew your attention to this fact in connection with Ceylon Green Teas and Ceylon Black Teas ; and equally it holds good as regards Indian Green Teas and Indian Black Teas. But Fortune made his highly important discovery in the days before Ceylon began to grow tea, and when India was only preparing to compete for the patronage of the world's great tea markets. And in the early stages of the struggle to make British-grown tea more popular than China tea, both India and Ceylon concentrated their attention on producing rival grades of the black variety. When these colonies took up the green-tea branch of the industry, they knew, thanks to Fortune, that there was no need for them to cultivate a special kind of tea-plant for their purpose ; the manufacturing process alone demanded their special attention, and their ambition was to win over customers by supplying green tea which should be of the best quality that could be purchased at the price charged, and which, no matter what the

quality and price, could be relied on as a wholesome commodity produced under absolutely cleanly conditions.

The peasant tea-farmers of China use no machinery, and their workshop is a barn, a shed, a room in farmhouse or cottage, or maybe an outhouse belonging to some temple or monastery. To some such simple workshop, which may be a mere hovel, the freshly-plucked leaves are brought from the fields. The crispness is then cooked out of them. I have already introduced you to the "drying-pans" in which this operation is performed. You have also seen the next performance in the general method of treatment—expelling moisture from the leaves and rolling them by the aid of hands or feet. The rolled leaves are spread in a thin, even layer upon bamboo frames, and left to dry naturally; great care must be taken to see that the sun does not scorch them, for it is essential that they shall still be soft for the next operation. After evaporation has been effected, the leaves are once more put into the drying-pans, and slowly cooked for about an hour; to prevent them from getting burnt they are well stirred, first by hand, and then, when they are too hot to touch, by the help of bamboo whisks.

The tea-cooks wear very little clothing, and perspire as freely as though they were taking a Turkish bath. If you were invited to partake of a pudding which you knew had been made by a cook while she was taking a Turkish bath, how would you feel about tasting it? At first, probably you would say, "No, thank you." But suppose you were then told that this pudding was a particularly nice one, such as no other cook could make. Might you not feel just a little tempted to try it? And suppose you were further told

PLUCKING TEA IN FORMOSA

that the pudding-basin was arm's reach removed from the cook's perspiring body during most of the time the pudding was being made, and were reminded that in any case the pudding had since been in contact with the purifying influence of boiling water, might you not decide to taste the fare which was said to be such a delicacy? And if the first taste pleased your palate immensely, would you not ask for more of that pudding?

People who have tasted China tea, and who happen to have a palate to which it appeals, argue that there is really no reason for anyone to feel squeamish about the way it is prepared. They say that the qualities of the tea-leaf which specially appeal to the *gourmet* can only be preserved in hand-prepared tea; that the cooking of the leaves destroys any impurities they may have collected up to the time they are finally put in the drying-pans; that any stray drops of perspiration which may fall on to the leaves in the drying-pans must be completely evaporated, and that the cooking is fatal to germs; that the boiling water which is poured on to the leaves in a teapot is a further purifier; and that it is well known that tea as a liquid is antagonistic to the life and development of microbes.

Tea prepared by the process I explained to you a few minutes ago is green when it is taken out of the drying-pans. But when it is intended for export, the colour is usually intensified by artificial means, and the surface faced, or polished. The tea is sifted and sorted, by hand labour and the aid of baskets, and finally packed in wooden cases, baskets or bags.

Black tea is prepared by a very similar process, but after the rolling operation the leaves are left spread out

on the bamboo frames until the influence of the air induces fermentation.

Much of the tea exported by China is compressed into "bricks" or into "tablets." Brick Tea, usually of wretched quality, is a roughly prepared mixture of coarse leaves and twigs, thrown into a mould, and pressed into brick-like blocks. Enormous quantities of this poor stuff are made at Yachou, in the province of Sechwan, and at Hankow. The principal importers are Tibet and Mongolia; there are also markets for it in some parts of Russia. Tablet Tea is a very different article, being a compression of good quality tea dust. It is made in large quantities at Hankow, and Russia is a very good customer for it.

CHAPTER XIII

IN JAPANESE TEA-LANDS

Tea bushes were first planted in Japan about 1,200 years ago. But it was not until about 1750 that tea was first exported from that country by some Chinese merchants of Nagasaki. Rather more than a hundred years later, in 1859, Yokohama and Kobe were opened to foreign commerce, and with these two new open ports in addition to Nagasaki, as outlets to foreign markets, the Japanese tea-trade increased considerably. At first England was a very good customer, but by about 1871 she had practically stopped patronizing the Japanese product, owing to the development of the tea industry in Ceylon and India. Nevertheless, British competition has not by any means had the same disas-

trous effects on the tea-trade of Japan as on that of China.

The chief tea-producing districts are Shizuoka,—which contains rather more than one-fifth of the whole acreage under tea in Japan,—Miye, Ibaragi, Kyoto, Kumamoto, and Fukuoka.

The tea-plant is cultivated on large farms, some of which are of a size that entitles them to the more dignified name of "plantation," and on small plots of ground in connection with homesteads. Generally speaking, the favourite site for a tea-farm is on the lower slopes of the hills; but there are some very good plantations, notably the celebrated Uji tea-gardens, on the plains.

When first we land on Japanese shores, it seems to us that a Western civilization is doing its best to make us feel "at home." But as we get further and further away from town life, and penetrate into the heart of the country we discover "Old Japan." Wandering amidst the tea-lands, and mixing with the country folk who tend the tea, we are brought under the fascination of the land which is world-renowned for its power to charm. True, there are up-to-date factory buildings to remind us that the spirit of progress has a widespread influence; but the outstanding features of our surroundings are artistic rather than commercial. Indeed, we are tempted to ignore the factories as insignificant, and thereby do Japan a great injustice, so greedy are we to feast on the enjoyment that is provided by the magnificent hill scenery, by the sacred Mount "Fuji," by fairy-like buildings dotted about rural slopes and plains amidst an atmosphere that is charged with romance, and by the habits, customs and picturesque national costumes of the quaint little Japs.

Frequently we find tea-bushes growing in company with other crops, such as mulberries and plums. And in the Uji district the tea-lands have yet another novel spectacle to show us in connection with cultivation methods. Here the tea-bushes are grown under cover for part of the year. A framework of bamboo poles supports a roof of mats, which shades the plants, with the object of inducing them to bear leaves of a superfine quality and of a very dark-green colour. When the crop has been gathered, the sunshade erection is removed.

The tea harvest season in Japan begins about May ; usually, two crops are gathered annually, a second flush being ready for plucking towards the middle of June. Sometimes the bushes are picked over a third time, but the resulting crop consists of inferior quality leaves.

The teas prepared in Japan are, for the most part, green. Commercial instinct and intercourse with the world have taught the Japanese to keep well abreast of the times in the tea industry ; they use modern machinery in the preparation of the bulk of the teas for foreign markets. But such skilled handicraftsmen could hardly be expected to acknowledge the superiority of a machine in any industry ; and it must be difficult for a nation that is so cleanly as to be world-famous for its cleanliness to understand why the world-at-large prefers machine-prepared to hand-prepared food supplies. However, since the foreigner demands machine-prepared tea, the Jap in his rôle of competitor for foreign custom has erected factories, installed machinery, and is on the alert to please the taste and fancy of the public without his gates. But

ROLLING THE LEAVES, FORMOSA

it is a significant fact that the bulk of Japanese teas for home consumption are prepared by the old-fashioned hand method. It is interesting to note that those artists in life, the Japanese, not only uphold by force of example the argument that machinery tends to impair the quality of tea-leaves, but even when there is business at stake they do not suppress their private opinion on this point. In a booklet published as recently as 1911 by the "Japan Central Tea Traders Association," written in English, and addressed from their head-quarters at Tokyo to tea drinkers in general, and to their best customers, the Americans, in particular, the "peculiar characteristics and strong points of Japan Tea in preference to all other kinds of tea" are summarized in a most persuasive manner. Herein we are told that "the most modern methods of manufacture by specially designed machinery succeed in retaining the natural aroma of Japan Tea"; but a little further on we come across this equally emphatic and somewhat conflicting statement: "The Japanese have been acknowledged born experts in handicrafts from ancient times. Japan Teas as first exported to America were the product of skilled handicraft, and although modern machinery methods have supplanted to a large extent the old hand manufacture, the so-called 'spider legs' still exported, and '*matcha*' (powdered tea) and '*gyokuro*' (dew drops) mostly for home consumption, represent the most artistic production of the tea-leaf."

The total amount of tea exported by Japan in 1911 was 32,187,594 kin—a kin is equal to 1·322 lbs. avoirdupois. The area under tea cultivation is about 49,221 chō—a chō is equal to 2·45 acres.

CHAPTER XIV

IN JAPANESE TEA-LANDS (*continued*)

A VERY active and progressive part as tea producer is played by the island of Formosa, which has been a Japanese possession since 1895. It is famous for a variety of tea known as "Oolong," which was first exported in 1867.

A legend tells how it came to pass that this name "Oolong," which means "black dragon," was given to a particular kind of tea. The story runs that a native of the Province of Fukien, in China, was one day picking tea-leaves in his garden when he noticed that a certain tea-plant was giving forth a particularly fragrant odour. Upon examining this plant, he found a beautiful black snake curled round it. Believing this snake to be a good omen, he plucked the leaves of the plant and made them into tea, when, to his delight he found that the product had a specially agreeable flavour not possessed by any other teas.

Oolong Tea is neither a black tea nor a green tea, but a combination of both. Before infusion the prepared leaves look black; the action of boiling water on them results in a beverage that combines the flavour of green tea and the odour of black tea. An examination of the leaves after the infusion treatment leads to an interesting discovery which throws light on this curious combination of characteristics. As witness to the fact that black tea is fermented during the course of manufacture, the leaves when infused are of a reddish-brown colour; and as green tea does not

JUNKS BEING LADEN WITH BAGS OF TEA, FORMOSA

undergo fermentation, the leaves remain green after infusion. But the leaf of Oolong Tea after infusion is of a reddish-brown colour round the edge, while the middle part is green, showing that it has undergone fermentation round the edge only.

Formosa is indebted for its Oolong tea-plants to some emigrants from the Fukien Province, who went over to the island in the early part of the nineteenth century. The climate and soil of this island have proved so favourable to the cultivation of this variety of tea-plant that it grows better in its adopted land than in its homeland. China produces several kinds of Oolong tea, such as Amoy Oolong, and Canton Oolong, but none to rival the finest quality Formosa Oolong.

The plants are propagated by means of layers, for it is feared that young ones raised from seed might have some marked peculiarity of a remote ancestor, instead of the outstanding characteristics of the family breed. The method of cultivation in Formosa is very simple. The districts where the best tea is produced are in the north of the island, situated among the hills along the upper stream of the Tamsui River. Eight varieties of the Oolong plant are grown, and as each has certain fads and fancies as regards soil, the cuttings are planted out according to their variety in particular regions. The bushes begin to yield when they are three years old. The fields are weeded and ploughed four times a year, and the bushes are kept down, by pruning, to a height of from about 1¼ feet to 3 feet. Until quite recently it was thought that manuring would spoil the special character of Formosan tea, but a special fertilizer has now been discovered, and it is said that by the use of this the yield of tea could be

doubled without any injurious effect on the quality of the product.

Since Formosa became a Japanese possession, the Japanese Government has done very much to foster the tea industry of the island, as witness the experimental station at Anpeichin.

The harvest season starts in April and lasts until November. The leaves undergo a double process of manufacture. By a first method of treatment they are converted into crude tea in the producing districts; the crude product is then taken to Daitotei, a borough of the city of Taihoku, where it is bought by dealers called "Chakwan," who refine it. Here is an official account of Oolong tea-making, as given by the Bureau of Productive Industries, Government of Formosa.

"In manufacturing the crude tea, the following process is adopted :—

"The leaves picked are scattered on the sallow bamboo baskets, each holding about two pounds, and they are exposed to the sun for a short time. When the leaves are withered, they are transferred to a separate chamber, where they are spread over shelves and left there for about thirty minutes to wither and ferment. Then the leaves are transferred to a larger bamboo basket, around which several workmen stand, and turn over these leaves rapidly for a little while. Again these leaves are distributed in small baskets, and then are placed upon the shelves in the chamber as before. When this process is repeated several times, the leaves become soft, and as the result of fermentation, they become reddish-brown colour round the edge and develop sweet odours. It requires considerable skill to cause fermentation of the leaves to

the suitable extent. These leaves are then panned over a wood fire in order to prevent further fermentation, and are transferred to the second pans near by. The leaves thus panned are placed upon matting and are rolled, a considerable pressure being applied, thus breaking the fibre and the cell of the tea-leaves. This process causes the leaves to emit gummy and pitchy substances, and when continued for eight to ten minutes, the leaves become rather sticky. These leaves are then placed in bamboo trays, and the moisture is evaporated by means of mild charcoal fires. This completes the local preparation, and the crude tea is packed in tea bags and sent to the Daitotei market. The crude tea thus obtained represents about 24 per cent. in spring and 28 per cent. in summer, making an annual average of 25 per cent. of the weight of green leaves."

Hundreds of junks are engaged in taking the crude tea to Daitotei, to be refined.

"The first process of refining is to separate dust and foreign matters from the leaves by means of baskets, and to sieve the same into several grades. The tea is then placed in bamboo baskets, and girls are put to work to separate bad leaves. Then the leaves are classified into several qualities, and the tea thus sorted goes through the process of refining over charcoal fire. This completes the second process, and the tea is packed in chests, each holding 40, 20, or 10 pounds.

"The Venesta tea chest is sometimes used, but generally these chests are made of pine boards lined with tea lead, and paper pictures of birds, flowers and figures are fixed on the outside bearing the brand of the respective merchant, and for export purposes the chests are packed in tea mats and bound with rattan."

The bulk of the crude Formosan tea is refined into Oolong Tea ; a small portion, however, is converted into Pouchong Tea.

Pouchong is a very favourite variety of tea with the Chinese, who have made it for hundreds of years. But Formosa only began to manufacture it about 1879. The process of making this tea is as follows :—

" The locally prepared tea is mixed with the flowers for scenting and kept in an air-tight chamber. When left in this manner for a few hours, the tea absorbs the fragrance of the flowers, and then the leaves are heated, thereby evaporating the moisture. Then the flowers used for scenting are carefully picked out. The Pouchong Tea is packed in chests in the same manner as the Oolong Tea."

The production of tea in Formosa in 1910 was,—19,878,822 kin. The area under tea cultivation in this island is about 34,368 kō—a kō is equal to 2·45 acres.

CHAPTER XV

WORK AND PLAY IN THE TEA-LANDS OF JAVA

A HIGHLY successful competitor in the tea industry is the Island of Java. Tea seed was first brought hither from Japan, in 1827, and experiments made in its cultivation at the world-famous Botanical Gardens at Buitenzorg. A little later on, seed was obtained from China, and tea-growing was begun as a commercial enterprise.

The tea district of Java is in the west of the island. Nearly all the labourers employed both in gardens and

factories are Javanese; a few are Sundanese. The bulk of the crop is converted into black teas.

Whilst we are in the tea-lands of Java, I must take you to an entertainment which will, I feel sure, afford you much amusement, and which will give you an idea of the way in which the labourers make merry when the day's work is done.

We are in an estate's village, in the near neighbourhood of some large tea-gardens. The time is evening, and by the light of the stars we pick our way down a hill-side track, steering our steps as directly as possible towards a group of bright lights in a hollow close ahead. Upon reaching our destination, we find ourselves in a small, oblong market-place. The open-sided, rustic building in which we are standing, amidst a crowd of natives, is merely a framework of rough-timber poles, whose sole duty it is to support a thatched, overhead covering; the floor is of Mother Earth, which has been trodden hard and smooth during a long course of being well worn. Our glance begins to traverse an alley-way between stalls, but is quickly drawn to take a sweeping view at a general level slightly above our heads, and in a twinkling we get a first strong impression that the market-place has been elaborately and tastefully decorated with Paisley shawls, in honour of some festival. Cords stretched in all directions are hung with sarongs and kerchiefs, displayed for sale, and many of these printed cottons are exquisitely patterned with designs that closely resemble decorations such as we have become familiar with through those shawls that were so greatly treasured by our great-grandmothers.

Threading our way along a passage between stalls,

we reach the outskirts of a dense little gathering that has collected in one corner of the market-place. Evidently something of especial interest is going on—people are craning their necks and watching for an opportunity to slip into a more advantageous standing-place, and all such good places as can be reached by climbing are fully occupied. By the courtesy of the crowd to us as strangers, we are soon standing in the front row of spectators, getting a near view of a novel, theatrical performance. A small square of the ground serves as stage. In the background squats the band. Seated to one side on the foreground is a man, who is the star artist and the sole living actor in the play that is being performed. On the upper shelf of a wooden stand within his arm's reach a large number of puppets have been carefully laid out, whilst higgledy-piggledy on a shelf beneath lie more puppets. The man is filling the rôle of actor-showman. The puppets are actors in a play that is in course of performance, and each has been "made up" and dressed to take a particular part; the actor-showman says all their speeches for them. Evidently, a comic part in the dramatic story has just been reached as we pass into the front rank of the audience, and take our stand on the scalloped border-line of a rough square, that marks the end of the auditorium and the beginning of the stage. We catch a glimpse of a court lady being put on the lower shelf, amongst the motley pile of all sorts and conditions of puppets which have already been through their turn. Then we see the showman select from the upper shelf a puppet with a monster head and jovial little face. This jester on a stick, supported by the right hand of the showman, cuts some clever

and amusing capers ; the showman speaks a few words, pauses, begins to say something else, and is interrupted by a protest from the big tomtom. Looking very serious, the spokesman continues talking, but his merry tone of voice has suddenly changed to a dreary monotone ; presently, he again pauses, and now the audience, who have been smiling frequently during the last few minutes, laugh heartily. Evidently the showman knows how to make a good joke win its fair share of appreciation ; and although we cannot understand his language, we laugh because the general merriment is infectious. We watch the showman manipulating various other puppets, one by one, the while by facial expression and gestures he plays their part with them, and with a voice over which he seems to have complete mastery, recites all their speeches in dramatic style. As we turn to make our way out through the crowd, the story has reached a point at which the hero seems to be on the villain's track ; and at least half a dozen native babies are amusing themselves by crawling about the stage.

CHAPTER XVI

NUMEROUS OTHER TEA-LANDS

Amongst British competitors in the world's tea industry, the third place of honour has been won by Natal. And although at present the output of tea by Natal is small in comparison with that of India and Ceylon, it is equally true that this South African colony has so far outstripped any other British competitor that she is the only British rival in whose

activities India and Ceylon now feel it necessary to take a watchful interest.

Natal first turned her attention to tea growing as a commercial enterprise in 1877, owing to the sudden collapse of her coffee industry. The coffee planters were on the verge of ruin when the chairman of the Lower Tugela Planters' Association, Mr. (now Sir) J. Liege Hulett, made his carefully considered suggestion as to the most promising way of dealing with the crisis. He pointed out that tea-plants were then flourishing in several parts of Victoria County. True, they were not yielding good quality tea, but against this fact he pitted another—the plants had established themselves and were growing well in every district into which they had been introduced in this County. He argued, therefore, that the experiments which had already been made in tea cultivation led to the conclusion that a tea industry could be established in Natal provided suitable seed was obtained. A few enthusiastic supporters of this theory clubbed in with its advocate to provide money for conducting a further experiment, with seed from India ; and the Government came to their assistance with the promise to provide free freight for the seed from India to Durban.

The seed was procured for the little syndicate by a friend in Calcutta, and despatched from that port early in January, 1877, in the chartered steamer *Umvoti*. Upon its arrival at Durban, about the middle of March of the same year, it was divided amongst the members of the syndicate in proportion to the amount of money contributed by each towards its importation, and immediately planted out in nurseries.

TEA-GARDEN ON TJIHAWOENG ESTATE, JAVA

Showing jungle-clearing by burning in background; ground cleared for planting; and houses of the labourers in the foreground

From these seeds, of the varieties *Assam indigenous* and *Assam hybrid*, 4,000 seedlings were successfully raised ; but at about the same time as they were planted out, a severe drought set in, and only 1,200 survived the ordeal. It was now decided that the best thing to be done was to treat the survivors as the members of a seed nursery, and patiently to await the time, about three to four years hence, when they should in due course begin to furnish a seed supply.

The plants thrived and yielded a first supply of seed in 1880. By 1881 the helpful and encouraging career of these immigrants had led to a determined attempt to extend the cultivation of the plant. Again misfortune dogged the enterprise ; drought and insect pests destroyed a large number of the young plants. Discouragement followed discouragement, but the pioneer planters fought so courageously, intelligently, and resolutely against all adversaries, that gradually the area under tea was increased, and a tea industry established.

Natal now has upwards of 4,000 acres of tea-lands. The most successful gardens are situated at an altitude of about 1,000 feet above sea-level. The variety of plant which has so far given the best account of itself in this country is the *Assam indigenous*.

It is not so much the actual growth up to date of Natal's tea industry that has attracted the attention of other competitors, more especially of those Imperial relations who are hundreds of millions of pounds ahead of her in the annual production test, but the possibilities of Natal as a tea-producing country, and the ambition of her planters and of many other people interested in her welfare. The present position in

relation to what the future may have in store is tersely and frankly summed up in the Natal Official Handbook for 1911 :

" Natal is capable of producing every ounce of tea consumed in South Africa, as the following figures will prove : There are at present under cultivation approximately 4,000 acres of tea, and the total output for the Province is 2,000,000 pounds. The quantity of tea imported into Natal during the year 1910 was 1,793,112 pounds, and the total imports into the whole of the South Africa Union were 5,006,405 pounds, thus showing that Natal does not produce more than 40 per cent. of the total requirements of South Africa. To emphasize the capabilities of the Province in respect of tea growing, it need only be mentioned that the area of the great tea-growing county (Victoria County) is 1,290 square miles, and that the magisterial divisions of Alexandra (on the South Coast) and Eshowe (Zululand) comprise an area of 779 and 690 square miles respectively, making a total of 2,759 square miles. Of course, it should not be inferred from this that all this land is suitable for tea growing ; but what it is intended to point out is that a belt of tea-land extends right through the areas mentioned. Sufficient land to supply all the tea consumed in South Africa at the present time can be found in the Lower Tugela Division (Victoria County), but unfortunately most of it is in the hands of absentee landlords."

The tea-plant has been introduced into many other lands, and in several instances the experiment has proved a success ; but for various reasons many countries in which the plant has shown its willingness to grow, have, as yet, only put comparatively small

Skeen & Co.

ON THE WAY TO MARKET

Tea starting from a Ceylon factory on its journey to distant lands.

areas under this crop. Chief among the minor tea-producing lands are the British West Indian Island of Jamaica ; the Batoum region, in the Caucasus, Russia ; the Andaman Islands, British India, in the Bay of Bengal ; Tongking, in French Indo-China ; the native State of Johore, in the Malay Peninsula ; and the Fiji Isles, British crown colony, in the South Pacific Ocean.

The leaves of several plants which do not belong to the tea family are used in the preparation of beverage-giving products, both product and beverage being spoken of as " tea." Chief amongst these preparations is the famous Paraguay tea, or Yerba de Maté, which is one of South America's most important products. Its source is a shrub belonging to the Holly family, which flourishes in Brazil and Paraguay. South America uses several million pounds of maté annually : the bulk of the output is contributed by Paraguay. At present Europe only takes small quantities of maté, but there are rumours afloat of a scheme to bring this product more before the notice of European and other foreign markets.

CHAPTER XVII

HOW TEA LEAVES HOME

Tea has many adventures during its long journey to market. First it has to go to the chief port of the district where it is obtained. In Ceylon, the port of Colombo is the distribution depot. The tea, packed in wooden cases which bear the name of the estate and that of the particular variety of the enclosure.

starts off from the factories in bullock-waggons. A "tea-caravan," consisting of a long procession of waggons, each with a thatched-tunnel awning, and each drawn by two bullocks, is a common sight in Ceylon; anyone who has seen such a procession wending its way under the charge of native drivers, along the tracks amidst the magnificent hill-scenery of this island, will often conjure up a memory of this picturesque spectacle, and experience again the joy born of its old-world atmosphere. Usually the tea is taken by the bullock-waggons to a local railway station, and thence by train to Colombo, where it is met by more bullock-waggons, and conveyed to some warehouse.

The time has now arrived for the tea to be sold to merchants. The stock in the warehouses is under the charge of various agents, who represent the estates. These agents ship some of the tea abroad, to be sold by public auction. But a large proportion of the Ceylon output is sold by public auction in Colombo.

In the case of stock that is to be disposed of through the Colombo Tea Exchange, the agents employ brokers, who act as salesmen. The brokers prepare catalogues, wherein particulars are set forth of the teas they have been instructed to sell—these particulars are a tabulated statement of such details as the name of the estate from which a consignment of tea has been received, the grade names of the various teas in that consignment, and the number of chests containing a uniform weight of each grade. The sale catalogues are sent round to merchants, together with samples of each of the teas referred to therein. From each sample received by

any one firm, an infusion of tea is prepared, to be judged by experts called "tea-tasters." A tea-taster who is going to act as buyer at the coming sale samples the contents of numerous cups, which are put ready for him on long tables ; from each cup he takes a mouthful, submits the liquid to the test of his critical palate—he does not swallow the liquid—and writes down in his catalogue the top price he is prepared to pay for the tea, corresponding with the sample from which the beverage he has just tasted was made.

Once a week the brokers sell by auction at the Tea Exchange. To the sale-room come the buyers, with their marked catalogues ; in bidding, they never go above the top prices jotted down by them at the time of tasting, and, naturally, they try to get the teas knocked down to them at a lower price. There is no tea to be seen in the sale-room.

After the auction, the cases of tea are transferred from the agent's warehouses to the warehouses of the merchants to whom they have been sold.

Some of the tea purchased at the Public Sales in Colombo is exported in the chests in which it is despatched from the estates ; such exports are termed "loose" teas. They go direct to the headquarters, in New York and other large cities, of the merchants who have purchased them.

But a very great deal of the tea bought on the Colombo Exchange is specially packed for export to foreign markets. Well-known firms, such as Messrs. Harrisons and Crosfield, of London fame, have large mills in Colombo, where Ceylon tea is blended and packed ; by the courtesy of this firm, we were able, when in Colombo, to pay a visit to their famous Victoria

Mills, one of the busiest hives of industry in the capital of Ceylon.

In a spacious yard, fronting a large building, stand a number of bullock-waggons. Loading and unloading operations are being actively pursued ; some men are bringing out packing-cases and taking them over towards a row of empty waggons on one side of the yard, whilst others are transferring cases indoors from a row of heavily laden waggons on the opposite side.

On the threshold of the main entrance we are met by the manager, who makes us very welcome, and proceeds to show us round. The very first scene that meets our eyes seems a familiar one to us ; men are turning over a big mound of tea with shovels, and we jump to the conclusion that they are bulking. We learn from our guide, however, that these men are not mixing together batches of tea which are all supposed to be of the same quality ; they are " blending " batches of ready-bulked teas, that is to say mixing together teas of different qualities with the object of forming a compound that is uniform in appearance and quality. Teas are blended up to a standard of quality that is fixed by the importer ; and in fixing this standard the importer has to take into consideration—

1. The price at which the mixture is to be sold. Different quality teas can be mixed in any proportion, always provided that the average cost price of a pound of the mixture does not exceed a certain fixed sum.

2. The particular taste of certain customers. Blending affects flavour ; by a solution of the proportion problem a blend of a certain popular flavour is produced within a fixed price limit.

TEA TASTING.

3. The appearance of the tea. Importers are as particular about the appearance as about the quality of tea, for they know that customers are largely influenced by the look of food supplies. Different people have different ideas as to what are "good looks" in tea, and the various fancies of customers in this respect have to be studied in the production of blends.

4. The water of the district in which the tea is going to be used. As the hardness or softness of the water that is used for making tea in the pot affects the quality of the beverage, one very important aim of blending is to produce a mixture that will give the best cup of tea when exposed to the action of the particular kind of water commonly used in the locality for which it is destined.

Various mechanical contrivances have been invented for performing the blending operation, but none of these is considered to be so satisfactory as the hand method.

In walking round the Mills we are very favourably impressed by the cleanliness of our surroundings; rooms, people, implements, all are doing their share in proclaiming that British tea is pure tea. The labourers, men, women, and children, are nearly all Tamils; here and there, amidst some picturesque group, we espy a Sinhalese. The members of one very attractive group are sitting, Eastern fashion, on the floor, around a slightly elevated platform. They are weighing tea, and, as the scales balance, shooting it into little tinfoil packing-cases. A neighbouring gang closes down the mouth of the packets, and hands them to the soldering gang. The packets having been hermetically sealed,

they are passed on to another gang, whose duty it is to enfold them in paper wrappers. The wrappers vary in colour, and are very communicative, as well as decorative, "contents bills." Finally, the packets are arranged in layers within wooden cases, which, when they are full to the brim, are nailed down. The tinfoil packets contain such weights of tea as are commonly asked for by the customers for whom they are specially put up ; America, for instance, requires tea to be put up in packets of which six go to the pound.

The electric weigher both interests and amuses us very much. Two scales, on a pivot, are incessantly turning somersaults. Tea falls down a chute into one scale, and when the right weight to a leaf has been received, the supply is automatically cut off. The one scale shoots its contents into a packing-case, ducks down, and up comes the other scale to go through a similar performance.

For some markets, such as South Africa, tea is packed loose into wooden cases. These cases are very gaily bedecked with stencilled pictures of scenes in Ceylon tea-lands.

From the packeting and packing department, we go on to the box-making department. And thence we are conducted by our kindly host to a pretty bungalow, where we have a delightfully English four o'clock tea on a veranda overlooking a beautiful tropical garden.

CHAPTER XVIII

HOW TEA LEAVES HOME (*continued*)

In India, elephants do a share of the local transport work; boats and trains are, however, the principal conveyances in which tea travels to the distributing ports. Calcutta is the hub of the Indian tea trade; here large quantities of tea are sold, and from this port enormous shipments are sent abroad, for sale by public auction in other markets. Much of the tea sold in Calcutta is blended and packeted there; and it is a particularly noteworthy fact that a considerable proportion of the tea which is thus made quite ready for the retail market, is bought by the residents in Calcutta and other Indian cities which have a big European population. People who live in a district which yields in abundance a certain product in the nature of a food supply, are apt to send that product abroad accompanied by attractive invitations to the foreigner to use it in his home, the while they set the very bad example of never using it in their own homes. For instance, in Greece, the land of currants, practically no one patronizes currants—at least, so I was led to conclude by my experiences in that country not very long ago.

In the north of India, Chittagong is the other famous distributing port for tea. South Indian teas are exported from Tuticorin, Calicut, Cochin, Alleppey, and Quilon.

In China, junks are a feature of the local transport service.

Tea usually leaves home for foreign lands in big steamers. The most notable exception to this rule is found in the method of transporting brick tea from China to Tibet. The bricks, done up in bamboo wrappers, travel by "coolie caravans"; numbers of them are fastened together into loads, and the loads are shouldered by men and women, who set off in parties to carry them to their destination.

Many Steamship Companies now carry tea across the seas. But the connection of the Peninsular and Oriental Steam Navigation Company with this trade is particularly interesting, for it is a link with the days when tea travelled in sailing ships, and had most enviable, adventurous voyages in those romantic vessels.

The days when the beautiful sailing clippers raced home from China round the Cape, for the honour—and profit—of bringing to port the first cargo of "new season's tea," passed away finally with the opening of the Suez Canal. Such ships, with some such dashing name as the *Cutty Sark*, got their living by carrying on the exchange of Western commodities for China tea, at a time when tea was still rather a luxury than a necessity, and when all grades of tea commanded a much higher price in European markets than is the case to-day. These ships were, so to speak, bred for the sport; long, narrow, deep, and fast—not carrying much as cargo bulk is measured nowadays—the highly profitable nature of their trade rendered the employment of these "thoroughbreds" practicable; and there is more than one recorded instance of two or more evenly matched tea-clippers leaving Woosing simultaneously for the same destination, usually the

Indian Tea Association

SHIPPING TEA FROM INDIA

Thames, and arriving so nearly together that every mile of the race half round the world must have been keenly sporting for those on board. The first steamers to make inroads on the sail-propelled carrier's preserves were those of the P. and O. Company, which were, in fact, the earliest, and for some years the only ones, in Chinese waters.

Nearly all the tea forwarded to England is the property of the producers ; in other words, it has yet to be sold to merchants. Upon its arrival in London, a shipment of tea is usually met by an agent of the producers, who sees it into bond. A duty of fivepence per pound is payable on tea ; the Government not only oblige by allowing payment of the duty to stand over until such time as the tea is sold and the purchaser wants to remove it from the custody of His Majesty's Customs, but require the importing agents to put every shipment into one of the official warehouses in order that it may be examined. For the law does its best to protect the British public against adulterated tea. Tea that is not fit for consumption stands but a poor chance of passing the Customs Authorities ; and if any impure stock gets into the market, all dealers have their own interests to serve in seeing that such stock is destroyed, for, under the Sale of Food and Drugs Act, anyone who offers adulterated tea for sale is liable to prosecution.

The world's record for the biggest Public Sales of tea is held by London, and the scene of the auctioneering activities is Mincing Lane. The method of conducting the Sales is practically the same as that which I explained to you in connection with the Colombo Tea Exchange. Teas from all the important producing

countries are sold in Mincing Lane, special days in the week being respectively devoted to putting up "lots" of Indians, Ceylons, Chinas, and Javas.

In London, too, the fine art of blending is practised by numbers of highly skilled specialists, and in many of the large mercantile warehouses of this great city an army of labourers is constantly employed in packing and packeting tea. And London not only distributes tea throughout the United Kingdom, but re-exports this commodity to foreign markets.

CHAPTER XIX

THE CUP THAT CHEERS

THERE are no statistics to tell us how much tea is consumed yearly by the Chinese and Japanese. But amongst all other tea-drinking nations, the people of the United Kingdom, taken as a whole, use the largest amount of the product per annum. In 1911 the total amount of tea consumed by the "leading customer" was 296,000,000 pounds, or $6\frac{3}{4}$ pounds per head of population : of this, 169,250,000 pounds, or rather more than 57 per cent., was purchased from India ; 90,500,000 pounds from Ceylon ; 14,500,000 pounds from China ; and 21,750,000 pounds from Java and other tea-lands.

The next big customer is Russia, in whose domains about 147,132,000 pounds of tea were used in 1910, the latest year for which, at this time when I am acting as your guide, a comparative list of tea-trade figures is available for reference. The average consumption per head in the Russian Empire works out at a little under 1 pound. Russia buys the bulk of her

tea from China ; but she takes large supplies from Ceylon—being, in fact, one of that island's principal customers—and also from India.

The United States come third among the purchasers of large quantities of tea for home consumption. In 1910 they used 83,298,000 pounds—about the same average amount per head of population as Russia. They are Japan's best customer, and they also place big orders with China ; but Indian and Ceylon teas are becoming more and more popular in the States. The Government looks very carefully after the interests of all tea drinkers, and a special law has been passed in the particular interest of the green-tea drinkers. In 1897 an Act came into force " to prevent the importation of impure and unwholesome tea " ; and on May 1, 1911, a new regulation strengthened it by the decree that no teas imported for home consumption were to be artificially coloured or faced in any manner.

Other important tea-drinking countries are Canada, Australia, Holland, Germany, and New Zealand ; but their annual purchases are much smaller than those of the three principal customers for the world's tea. For instance, in the year ending March 31, 1910-11, Canada bought 34,259,000 pounds of tea for home use ; and in 1910, Germany bought 6,875,000 pounds. Canada favours British-grown teas. Australia and New Zealand do likewise, showing a marked preference for Ceylon teas. Holland places a large share of her annual order with her colony of Java. Germany buys more than half her supply from China.

New Zealand holds the record for the largest annual consumption of tea per person ; in 1909, the average per head of the population was 7·45 pounds.

Trade records furnish much interesting information concerning changes that have been made by various countries in the placing of their orders for tea, such changes marking victory after victory for India and Ceylon. Until recently, China was taking her beating lying down. Now, an enlightened minority is trying to induce the tea-farmers to renounce traditional methods of cultivation and manufacture, and adopt the new methods which are practised by their rivals. Competition has not led to any serious decrease of the area under tea in China, and this country, as I have told you, still holds the record for quantity of output. In the scope which she has for transforming the immense quantities of inferior, hand-prepared teas now produced into superior quality, machine-manufactured teas, China has great possibilities for carrying the trade war into the rival's camp.

In talking statistics, which are apt to be exhausting, we have come to our journey's end, and the time for us to part company is at hand. A cup of tea will be refreshing to minds that have been trying to grasp the significance of figures that run into millions ; and I think you will agree with me that we cannot do better than finish our wander-tour, as we began it, over the cup that cheers. As we drink farewell, I should like to satisfy myself that you know the elementary rules, at least, of the art of making tea in the pot.

Of course, you have been told always to " warm the pot " before you put the tea in. But it is not so generally understood that the water poured on the leaves must be fresh, and freshly boiled. I have already warned you that care should be taken to select a tea that suits the water to be used. Now comes the im-

Stuart & Co.

PACKETING AND PACKING TEA, CEYLON

portant stage in which the tea is to be left to "draw." It is required to extract from the leaves as much as possible of their theine, or caffeine, to which the stimulating and sustaining power of tea is chiefly due. But the leaves also contain tannin. Tannin is an astringent, and therefore has a medicinal value—for centuries, be it noted, the Chinese used tea exclusively as a medicine. But tannin has a tendency to retard the digestion of some foods, and this tendency has been so exaggerated that some people believe tea can make leather of both food and the coats of the stomach. As a matter of fact, tea is very effectually prevented from acting as a tanning agent through the paralyzing influence of the alkaloid theine on the tannic acid. As, however, tannin can affect the natural process of digestion—hindering one change is a very different thing from effecting a totally different change—there is wisdom in taking care not to swallow overdoses of it. How much would constitute an overdose for any of us depends to a considerable extent on the health and strength of our digestion. But anyone who is not afflicted with an extraordinarily poor digestion has nothing to fear from the tannin in tea that is properly made, provided it is not taken in conjunction with a heavy meat meal. Some people—I, for one—can drink tea with any meal, and still be able truthfully to say they do not know what indigestion means.

Theine is much more soluble than tannin. In the course of about three minutes, boiling water extracts a large percentage of theine from the fresh tea in a pot, and a small percentage of tannin; in subsequent minutes the extraction of tannin will still be going on, but the amount of theine in the "draw" will be very

little increased. Now you can understand why tea should not be allowed to stew. A properly prepared draw of tea is never left standing on the leaves, but is poured off into a well-warmed, empty teapot. The addition of milk to a cup of tea helps to hinder the tea from impeding digestion.

Tea is not commonly drunk with milk in all parts of the world, nor is it always made by the simple aid of boiling water. The Russians, for instance, put a slice of lemon in their tea ; and the Tibetans make a paste of warmed flour and butter, flavour it with a strong decoction of tea, add milk or water for the purpose of dilution, and then churn the mixture.

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